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M E D I C A L
COMMENTARIES,

FOR THE YEAR M,DCC,LXXXVII.

EXHIBITING A CONCISE VIEW OF THE
LATEST AND MOST IMPORTANT DISCOVERIES
IN MEDICINE AND MEDICAL PHILOSOPHY.

COLLECTED AND PUBLISHED BY

ANDREW DUNCAN, M.D.F.R. & A.S. ED.

PHYSICIAN TO HIS ROYAL HIGHNESS THE PRINCE OF WALES
FOR SCOTLAND,

FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS, EDINBURGH,
AND MEMBER OF THE ROYAL SOCIETIES OF MEDICINE
OF PARIS, COPENHAGEN, EDINBURGH, &c.

Neglecta reducit, sparsa colligit, utilia selegit, necessaria ostendit, sic utile.
Baglivius.

DECADE SECOND.

V O L. II.

EDINBURGH:

PRINTED FOR C. ELLIOT, T. KAY, AND Co. at
Dr Cullen's Head, N° 332, opposite Somerset-Place,
Strand, LONDON;

AND FOR C. ELLIOT, EDINBURGH,

M,DCC,LXXXVIII.

ME DICAL
COMMENTARIES

FOR THE YEAR M.DCCCXXXVI.

REVIEWING A COMPLETE VIEW OF THE
LATEST AND MOST IMPORTANT DISCOVERIES
IN MEDICINE AND MEDICAL PHILOSOPHY
COLLECTED AND EDITED BY

ANDREW DUNCAN, M.D. &c. &c.
FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS, &c. &c.
AND MEMBER OF THE ROYAL SOCIETY OF MEDICINE
OF EDINBURGH, &c. &c.

Printed by J. G. Bell, Edinburgh, 1836.

DECADE SECOND



Printed for C. MILLOT, T. & A. CO. at
No. 1, St. Andrew's Place, Edinburgh.
And for C. MILLOT, Edinburgh.
M.DCCCXXXVI.

662

TO
GEORGE DEMPSTER, Esq.
OF DUNNICHEN;

Whose conduct in the British Senate,
For more than twenty years,
Has been uniformly distinguished
By a sincere, steady, and active, attachment
To the interest of his Country :

This Volume
Is respectfully inscribed,
As a slight testimony of the high esteem
Of his ever grateful
And most obedient servant,

ANDREW DUNCAN,

GEORGE DEMPSTER, Esq.

OF DUNDEE,

Whole number of the British Gazette.

For more than twenty years.

Has been uniformly distinguished.

By a direct, steady, and active attachment

To the interests of his Country:

This Volume

Is respectfully recommended.

As a display of the high esteem

Of his countrymen.

And most obedient servant,

ANDREW DUNCAN.

P R E F A C E.

WITH our annual publication for last year, we began a new series of volumes; and we expressed a hope, that, during the course of our second Decade, a volume would regularly appear every year by the first of January. It gives us some satisfaction to think, that, on the present occasion, at least, we are able, in this particular, to fulfil our engagements to the public; and we trust, that, as far as the publication depends upon ourselves, the same regularity will hereafter be continued.

We are, however, fully sensible, that regularity, in a publication of this nature, is but a secondary object, and of much less consequence to the reader, than a due degree of care in selecting the materials of which it is composed. In this particular, however, we trust that the present volume will not be thought unworthy of the attention of those who are sensible of the imperfections of medicine, and ardently wish for its improvement.

In the first part of the present volume, from a vast stock of materials, we have bestowed no inconsiderable attention in selecting what to us appeared to be the most important. And whether those of extensive reading may altogether applaud our selection or not, we trust that to those situated in less favourable circumstances the perusal of our work will be no less agreeable than useful. We are happy to find, that the alteration we have made in our plan, by not confining ourselves to a mere analysis of new books, but by candidly offering our opinion of their contents; when we are able to give a judgment as the result of experience, has met with the approbation of some of our most valuable correspondents. And we trust that those criticisms which are contained in the present volume, neither show a want of due deference to the assertions of others, nor inattention to facts.

For the second section of the present volume, our readers will observe, that we owe a public acknowledgment of thanks, not only to British practitioners both at home and abroad, but also to a distinguished foreigner.

And

And we trust, that our having communicated his important observation to the public in his own words, will not be considered as any deviation from our original plan, or inconsistent with a work, which, although principally written in English, cannot be entirely confined to that language.

We trust that many arguments are not now necessary for soliciting the aid of accurate observers to our future volumes. There are few who do not frequently meet with occurrences in actual practice which convey useful information to themselves; and when they reflect that these may communicate similar instruction to others, they can hardly consider themselves as altogether excusable in withholding them from the public: and we must consider ourselves as particularly indebted to those who make this work the channel of public information. Our correspondents may rest assured, that where their observations appear to us worthy of attention, they shall not be long withheld from the public; and, unless where some particular reason prevents it, every observation transmit-

ted to us by the first of August, will appear in the volume immediately succeeding.

The section of medical news in our present volume has extended to a greater length than in most of the former ones. But we trust, that while it affords the gratification of rational curiosity, it contains also many articles of important information, both in medicine and medical philosophy. To those who have directed their thoughts to the cause of heat, a subject which has of late engaged the attention of almost every philosopher in Europe, we flatter ourselves, that the last article of this section will afford an ample field for future and for interesting speculation.

EDIN. Dec. 1. }
1787. }

N. B. Those gentlemen who mean to favour us with any communications for our succeeding volume, will be pleased to transmit them to Dr Duncan, either at Edinburgh, or to the care of Messrs Elliot and Co. Book-fellers, opposite to Somerset-Place, Strand, London.

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M E D I C A L COMMENTARIES,

FOR THE YEAR 1787.

VOL. II. DECADE II.

S E C T. I.

Account of New Books.

I.

Observations on the Diseases incident to Seamen.
By Gilbert Blane, M. D. F. R. S. Physician
Extraordinary to the Prince of Wales,
Physician to St Thomas's Hospital, and Phy-
sician to the Fleet in the late War. 8vo,
London.

WE are informed in the preface to this
work, that the author was appointed
physician to the fleet under the command of

VOL. II. DEC. II.

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Lord Rodney in the beginning of the year 1780. This fleet seldom consisted of less than twenty ships of the line, and sometimes exceeded forty. Thus he had extensive opportunities of observation, in attending the sick both on board the different ships and at the different hospitals connected with the fleet. By order of the commander in chief, monthly returns were made to him of the state of the health of the men in each ship, that he might be better able to regulate the hospitals, and to recommend the proper means for promoting health in the fleet. Hence he had an opportunity of treading an almost unbeaten field, at least with respect to the extent of his observations. And in the work before us, he has presented his readers with faithful abstracts of the different returns made to him; which may, we apprehend, be considered as the most extensive collection of facts yet extant, for illustrating the medical history of the naval service, and for ascertaining the causes and course of disease in that situation.

Dr Blane justly observes, that in order to establish practical maxims in physic, reliance should never be put upon a few cases. Deductions

ductions from these will very generally be found to be inconclusive, if not fallacious; and they are apt to be turned and glossed according as the mind of the observer may be biaſſed by any favourite prepossession or hypothesis. It has, he assures us, been his study to exhibit a rigid transcript of truth and nature on a large scale, and to draw his conclusions only from a very great number of facts. These facts he has endeavoured to analyse and collate, by throwing the monthly returns into the form of tables, as the most certain and compendious way of finding their result. It is certainly much to be regretted, that no attempts have hitherto been made to transmit to posterity regular records of this kind. And the present essay, as laying a foundation on the solid ground of experience, for ascertaining the means of preventing and removing the diseases of seamen, may justly be considered as meriting peculiar attention.

The work before us is divided into three parts. In the first, we are presented with the medical history of the different voyages and expeditions in which the author was concerned: an accurate account being given of the

nature of the diseases which prevailed during these, and of the mortality which took place both on board the ships and in the hospitals. In the second part, our author endeavours to deduce from these facts, taken in conjunction with what had before been inferred from the experience of others, the causes by which diseases are chiefly introduced into fleets, and the means by which they may be most effectually prevented. And, in the last part, he presents us with a detail of that practice which was found to be most successful in combating those diseases to which fleets are chiefly exposed, particularly in warm climates.

The first of these parts is divided into three books. In the first, Dr Blane gives the medical history of the fleet from March 1780 till August 1781. During that time, the fleet was in the West Indies, excepting in autumn, when the greatest part of it went to the coast of America, to avoid the hurricanes incident to those regions at that season. In this book the author presents us with several interesting remarks on the effects produced on health, by change of climate, by differences of diet, of cloathing, and of discipline. He observes,
that

that the air at sea is much more healthy than that at land ; that in circumstances very similar, the mortality in the army is much greater than in the fleet ; and that in a warm climate, sickness is more frequently induced in a fleet, from land-winds when in harbour, or from the intercourse which the men have with the shore, than from any other cause. During this period, there were several engagements with the enemy : But though these were productive of hardships and exposure, yet they did not, he observes, tend to increase the sickness. This he attributes partly to the warmth and purity of the air at sea, and partly to the effects of battle upon the spirits of the men.

Dr Blane makes some general remarks on the climate of the West Indies. He observes, that there the thermometer shows but a small range of variation in the temperature ; that at sea, in the cool season it varies only from 69 to 79 degrees, and in the hot season from 76 to 83 degrees ; and that, on shore, it seldom rises higher than 87 degrees in the shade. Here also there are some observations on the remarkable hurricane which happened in the West

Indies in October 1780. A fever followed it of the most malignant kind known in that climate. But it seemed to be principally the consequence of great fatigue and hardships in refitting. For while it was destructive to the lives and health of the seamen, yet, with regard to the inhabitants on shore, it had a surprising and unexpected effect in mending their health. In the year 1781, after a long cruize to the windward of Martinico, the fleet contracted a degree of scurvy which they had never before experienced in the West Indies. They had been for a great length of time confined entirely to sea-victuals, having hardly had a fresh meal for six months. When they got to situations where they had a plentiful supply of fresh water, although neither fresh meat nor vegetables were to be procured, yet the progress of the scurvy was retarded; and there occurred several striking instances of the effects of lemons and similar acid fruits, in curing it without any other refreshments. The number of sick in the fleet was about this time so great that the hospitals were incapable of containing them. It became therefore necessary to provide the sick with

with all the necessary refreshments on board their own ships. This method was found to answer so well, that Dr Blane was afterwards led to prefer it to sending the sick on shore to hospitals, unless where their diseases happened to be of a contagious nature.

In the second book, the medical history of the fleet is continued from August 1781 till the conclusion of the war. In October 1781, Dr Blane presented a memorial to the Admiralty, setting forth the principal causes of the sickness and mortality in the fleet in which he had served; and proposing such means for the preservation of health as had occurred to him during his past service. In consequence of this, some additions and alterations were made in the victualing; and these seemed to have a salutary effect. In particular, the *Formidable*, the ship in which he was stationed, afforded a singular instance of the degree of health which may be attained on board a ship by proper attention. He observes, that about this time the fleet on the home station, as well as that abroad, was remarkably healthy, in so much that the hospitals at Portsmouth and Plymouth were not more than half filled.

He assigns as the chief cause of this, the continuance of the war, which had now lasted so long that the men were habituated to a sea-life. He thinks that one of the principal causes of sickness in the fleets in Europe at the commencement of a war, arises from the infection which is carried on board ships newly commissioned, from jails and guard-ships where impressed men are confined. On this occasion, he gives it as his opinion, that there is a tendency in acute diseases to wear themselves out, both in the individuals who labour under them, and when infection is introduced into a community. Unless, says he, there was such a *vis medicatrix*, there could be no end to the progress and fatality of these distempers. For otherwise the infectious matter would go on multiplying itself without end. It would, he thinks, necessarily destroy every person who might be actually attacked with it, and would infect every person who might be exposed to it. That such a tendency to decline, or *vis medicatrix*, may exist, we will not pretend to deny: But its existence cannot, we think, with any degree of probability, be inferred from the necessity
here

here supposed. For we doubt much whether any one instance has ever occurred where the decline of acute diseases could not be referred to some other cause than a tendency to wear themselves out. And even Dr Blane himself assigns it as another reason of the superior health of ships which have been long in commission, or long in hot climates, that in the course of time all the most weakly are cut off, and that it is the more hardy only who survive. He observes, that the liver complaints, of which so many die in the East Indies, are extremely rare in the West.

It was during this period of Dr Blane's history that the ever-memorable engagement of the 12th of April 1782 took place. Dr Blane observes, that there was less sickness, and less death from disease, in this month than in any of the former twenty-three months in which he kept records of the fleet; and also less than in any of the subsequent months till the fleet got to the coast of America. He accounts for this by observing, that the men had not been exposed to the noxious air of the shore in watering, as in the preceding months; that they had received from Eng-
land

land a fresh supply of provisions, among which was some four kraut, melasses, and essence of malt, all in addition to the ordinary articles of victualing; that many of the ships were supplied with wine in place of rum; and that as the weather was all along dry and fine, the men suffered less than would otherwise have been the case from exposure and want of sleep, which are necessary consequences of keeping the ships clear for battle for several days and nights together. But in addition to all these circumstances, he puts it as a question, whether this extraordinary degree of health might not also in part be owing to the effects of success on the spirits of the men? It is related, he observes, that when the fleet under Admiral Matthews was off Toulon, in daily expectation for some time of engaging the combined fleets of France and Spain, there was a general stop put to the progress of disease, particularly of the scurvy, from that generous flow of spirits with which the prospect of battle inspires British seamen. But, says he, if the mere expectation and ardour of battle, without any happy event, could have such a sensible effect, what must have been
been

been the consequence of the exultation of victory ; of a victory in which the naval glory of Britain was revived and retrieved, after a series of misfortunes and disgraces which had well nigh extinguished the national pride in every department of service ? The plain and honest, though unthinking, seaman, is not, he observes, less affected by this than the most enlightened lover of his country. And even the invalids at the hospital demonstrated their joy, by hoisting shreds of coloured cloth on their crutches.

Dr Blane thinks that there is something in situations of exertion and danger which infuses a sort of preternatural vigour. When the mind is interested and agitated by active and generous affections, the body forgets its wants and feelings, and is capable of a degree of labour and exertion which it could not undergo in cold blood. The quantity of muscular action, he observes, employed in fighting a great gun for a few hours, is more than is employed for a week in the ordinary course of life ; and although performed in the midst of heat and smoke, and generally with the want of food and drink, yet the powers of
nature

nature are neither exhausted nor overstrained, and the future health of those who survive unhurt by external violence, is so far from being injured, that it is sometimes mended by this violent but salutary agitation. The loss in the action, and the number of mortal wounds, were not so great as might have been expected in a battle continued for a whole day. This advantage was owing to the superiority of our fire, as well as to the closeness of the fight, of which the commander in chief set the illustrious example, by penetrating the enemy with his own ship: a bold and singular effort, which first decided the fortune of the day. When ships in action are exposed to each other at a small distance, the velocity of cannon-balls is so great, that in penetrating a ship's side few or no splinters are torn off: and by these more men are commonly killed and wounded than by the ball itself. For the same reason, a close shot does less damage to the ship itself than a distant one: for a quick flying ball makes an aperture less than its own diameter; whereas a spent one produces innumerable splinters, at the same time shivering the object it strikes,

and

and making wide and extensive rents in it. The proportion of the wounded to the killed is also, our author observes, greater in distant than in close fight, on account of the greater number of small splinters. Of this, he observes, an experimental proof is afforded in comparing the action in April 1781 with that in April 1782. In the former, the enemy having kept far to windward, and engaged at a great distance, the proportion of the wounded to the killed was considerably more than four to one; whereas in the latter, where the greater part of the action was close, the proportion of the wounded to the killed was little more than three to one.

Dr Blane next relates the state of the fleet in point of health while at Jamaica in summer 1782. The ships of war made prizes from the French proved a great source of disease, in consequence of their great inferiority in point of cleanliness and of discipline to the British ships. For our author is inclined to imagine, that although the usual cause of bad fevers on board of ships is some infection derived from the living human body, yet that in some cases they may be produced,
parti-

particularly in hot climates, from what may be called simple putrefaction, such as took place in the holds of the French prizes. In this opinion, although of late it has been much controverted, we must own that we are disposed to agree with him.

He next makes a comparison of the health of the fleet under Lord Rodney with that under Admiral Vernon about forty years before. And this comparison turns out much to the advantage of the former. He mentions in this place a curious fact, showing, that the miasmata inhaled by the body, which give rise to the bad fevers of the climate, are for some time latent in the body before producing their effects: For those men which had been exposed to them in the watering duty, were taken ill some time after the ships went to sea, and were the only men on board affected with such fevers.

The fleet having again sailed to America in the hurricane months, some observations occur on the influence of climate, on the progress of disease in long voyages, and on the best method of recruiting the health of a fleet while in port. In our author's relation of

his different voyages, it is a frequent remark of his, that infection is not apt to be produced in a hot climate; that when imported there, it soon becomes extinct; and that the true jail-fever and the plague are unknown in the tropical climates. The most probable reason for this, in our author's opinion, is, that the heat exhales and dissipates the noxious effluvia which create infection.

This second book is concluded with a comparison of the health of that part of the fleet which had been inured to the climate and to the service, with that of a squadron by which the fleet had been reinforced from Europe in December 1782. This comparison clearly shows the superiority which the old squadron possessed in point of health. For during the first month, while the deaths in the old squadron did not amount to more than one in twelve hundred, those in the new squadron amounted to about one in five hundred. In proportion, however, to their continuance in the West Indies, the number of deaths gradually diminished; and at the end of three months, the two squadrons came to be nearly equal in point of health.

The

The third book contains a relation of the numbers sent to the hospitals from the fleet during the term of the author's service, and of the mortality among these from different diseases and from wounds. The only three diseases which Dr Blane thinks it necessary to specify, are, fevers, fluxes, and scurvy. These, he thinks, may be called the sea epidemics. And, next to these, the most fatal complaint in a hot climate is the scorbutic ulcer. Here the author very properly takes notice of the fallacy of those observations which would estimate the success of practice from computations of the number of deaths in proportion to that of sick. For this must depend very much on the slightness or violence of the complaints, and must be not less affected by the treatment in point of accommodation and diet than in the way of medicine.

To his other remarks in this part of the work, Dr Blane subjoins a general state of the whole loss of lives which occurred in the fleets and in the hospitals with which he was connected, during the period of his service, which continued for three years and three

3 months.

months. There were killed in battle 648, there died of wounds 500, and there died of disease 3200. Thus it appears that the deaths from the two former causes put together amounted to little more than one-third of those which resulted from the latter alone: a striking proof of the necessity of employing every possible attention to the preservation of health during war. And it is by no means a new occurrence, that the number of those who in this situation die by disease is greater than the number who fall by the sword. There is good reason to believe, that this has held in all nations and ages, even in those ancient times when the slaughter in battle was much greater than in our days. And Dr Blane quotes a passage from Arrian's history of the expedition of Alexander the Great, to show that the same thing held even in his armies; which may perhaps be considered as the oldest authentic evidence to be met with on this subject. It has been with justice remarked, that the exertions of human ingenuity in improving the art of war, and particularly the discovery of gun-powder, has diminished the slaughter of battles. And there can be little

doubt that an equal degree of attention bestowed on the means of preserving health, would produce a proportional diminution of deaths from disease in the armaments of modern times.

The second part of this work treats of the prevention of sickness at sea. To illustrate the very great importance of this, the author relates from history several expeditions which miscarried solely from the prevalence of sickness. And from observing the great diversity in point of health, in ships of the same squadron, and with the same external and natural advantages, he infers, that the preservation of health depends very much upon arrangements which are within the power of human attention; and that the means of accomplishing this end are almost always attainable. The prevention of diseases, he observes, is not only more important than the cure, but the means of it are more in our command; in as much as it is more within the reach of human art to keep people from coming in contact with contagion, to alter their food or cloathing, to direct what exercise they are to use, and what air they are to breathe,

breathe, than it is to produce any given change in the internal operations of the body.

In pursuing this object of prevention, he observes, that it is also fortunate that the diseases of seamen are but few and simple. They are chiefly fevers, fluxes, and the scurvy. These indeed are, he allows, among the most fatal affections that can assail the human frame. But there is, he observes, a numerous tribe of complaints, and which constitute some of the most severe scourges of mankind, from which seamen are almost entirely exempted. These are the diseases to which the indolent and luxurious are subjected, and which so far embitter their life as to render their portion of worldly enjoyment nearly on a level with that of the poor and laborious. Among these may be enumerated, the gout, stomach complaints, hypochondriasis, and other nervous and mental affections. To these the higher ranks of people are almost alone liable, as being much owing to the want of bodily exercise, to free indulgence in the pleasures of sense, and to a great keenness and delicacy in the passions and sentiments of the

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mind. He observes, however, that although muscular exertion, and exposure to the weather, be necessary to health, yet that in this there is a medium; and that when these amount to hardships, as frequently happens in the life of seamen, they tend to bring on premature old age. Hence it is, he observes, that this class of men are in general short-lived.

The causes chiefly affecting health, according to Dr Blane, are four; air, aliment, exercise, and cloathing. Of each of these he treats separately. He supposes air to be contaminated in three different ways; by marshes, by the living human body, and by putrefaction. It would appear, he tells us, that the land air in hot climates has in general something noxious. Ships, he observes, are very apt to be affected with the endemic diseases of a country, when lying under the lee of the land, particularly at a place where there are marshes. He advises that this therefore, where it is possible, should be avoided. But the circumstances in which seamen are most apt to catch the diseases peculiar to hot climates, are in the duties of wooding and watering. These, however,

however, are operations unavoidable in the course of service. But he advises, that the men, when upon these duties, should not on any account be allowed to sleep on shore; and that, when they are sent on shore, they should be allowed a dram of spirits and some Peruvian bark, or some other bitter and aromatic substance, to prevent the noxious effect of the air. He observes, that one of the most pernicious practices to Europeans who newly arrive in hot climates, is exercise in the heat of the sun: and it is this, joined to intemperance in drinking, which render such climates so fatal to them. Besides the more obvious effects of bad air depending on heat and moisture, Dr Blane mentions several instances of the singular quality of air in particular places; which, though its influence cannot be accounted for, has yet certainly the effect of producing the diseases which are peculiar to such places.

But the peculiar species of bad air which is more particularly the object of this work, is that which is produced by the living human body, from the neglect of cleanliness in the persons of men. In this, he thinks, infec-

tion may be said to consist. This, he observes, is the origin of jail or hospital fever, as it has been called ; and is the principal cause of the most fatal sickness prevailing in ships. Under this article he inquires, *1st*, Into the means of preventing the introduction of such infection ; *2dly*, Into the means of preventing its generation ; and, *3dly*, Into the means of eradicating it. Under the first head, his chief cautions are directed against receiving men from guard-ships, where they have been confined after being impressed into the service, or after being brought from jails. He strenuously recommends that they should be previously purified, by washing them, and by changing their cloaths.

Great caution, he observes, is also necessary in preventing the crews of ships from mixing with prisoners of war, or with those men who have been returned in tenders after being confined in the enemies jails. The author here introduces two remarks, which may perhaps appear new to many readers. The first is, that men who have been long confined, and whose persons have been neglected

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in point of cleanliness, may excite fever in others, though they have it not themselves, in the same manner as has been known to happen in the trials of criminals. The other remark is, that two sets of men, though separately healthy, may mutually produce disease among each other when mixed.

Dr Blane here enters into some general reflections on the nature of contagion. But he acknowledges that there is very great obscurity in this as well as in other operations of the animal œconomy. It is fortunate, he observes, that even in the most prevailing contagions, only a certain portion of those exposed to it are seized. He distinguishes between that infection which consists in a continued communication of matter, such as small-pox or the like, and that which is occasionally produced, such as fever: And he concludes with remarking, that it is none of the least curious facts with regard to infection, that there are some species of it by which the body is liable to be affected only once in its life. When this is properly considered, it is indeed conformable to what happens in the course of the disease itself:

for unless there were in the body a power of resisting it, there could be no such thing as recovery. When the disease actually exists, the continued presence of the poison, which is also infinitely multiplied, would infallibly produce death in all cases, unless the living powers were to become insensible to it.

The next caution recommended by the author, is what tends to prevent the production of infection. The chief means of effecting this are cleanliness and ventilation. He contends, that the most valuable part of discipline consists in enforcing these; and he proposes that there should be certain established methods of inspecting the persons and the cloathing of the men. He earnestly exhorts the officers, whose particular province it is, to exert themselves on these points. For without these, every other precaution conducing to health would be thrown away. It would, he observes, be to little purpose to provide the most nourishing and antiscorbutic diet, the most wholesome and cordial wines, the most efficacious remedies, and the most skilful practitioners, if the men be not constrained to
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keep their persons sweet, their cloathing and bedding clean, and their births airy and dry.

The last article treated of under this head, is the means of eradicating infection. This is proposed to be done, by separating those who are ill of infectious complaints from the others, either by assigning a particular birth to them in the ship, or by sending them to an hospital. And for this purpose, it is not only necessary that an early attention should be paid to those who are taken ill, to prevent personal intercourse with those in health, but that attention should also be paid to their cloaths and bedding. These, as circumstances may seem to require, are either to be destroyed or thrown over-board, or to be carefully washed and smoked. Where the sick can be entirely removed, he recommends that their births should be cleansed, that fires should be made in them, and that they should be white-washed with quicklime. And when the infection is inveterate, so that there is a suspicion of its adhering to the timbers of the ship, it ought to be thoroughly fumigated. But he considers heat as conducing more to the destruction of contagion than smoke ; and
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he looks upon fire as being its most effectual antidote.

The third species of foul or noxious air of which Dr Blane treats, is that which is generated in a ship by what may be called simple putrefaction. This relates to that sort of cleanliness which is independent of the persons of the men. And on this subject, in comparing the English with the French ships, and the present times with past ages, he draws a parallel very favourable to this country, and to the present age. It has, he says, been doubted by men of high authority, whether any corrupted quality of the air was really noxious, but that which proceeds from the living human body. But he contends from facts, that, in hot climates at least, fevers may be produced by the putrid effluvia of external inanimate bodies. The principal means of removing this sort of evil are, by frequent scrubbing and washing the upper decks of a ship, and by producing dryness and change of air below, from fires, wind-fails, clean ballast, and tightness of the bottom.

In the succeeding section, Dr Blane treats of the means of guarding against infection and
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bad air. For to this individuals will often be unavoidably exposed. He observes, that in consequence of the endless variety which occurs in the human frame, both with respect to mind and body, some people are naturally much more susceptible of disease than others; and that this susceptibility is also affected by habit, and by certain temporary conditions of the body. It has been observed, that those who can afford generous diet, are better fitted to resist infection than those who use a meagre and watery diet. Attention, therefore, is due to this circumstance. He advises also, that no one should go to the sick with an empty stomach; and that whatever tends to weaken and exhaust the body, or to depress the mind, should be avoided. He also enumerates cold and moisture as circumstances which invite the attack of infectious diseases. In situations where general contagion prevails, those diseases depending simply on cold and moisture do not appear. Every disorder of the body then takes the form or gives occasion to the reigning epidemic. And on this principle, the author accounts for a fact recorded by Thucydides, that during the plague

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at Athens, no other complaint appeared ; and also for an observation which he has himself made, that such diseases as are simply the effect of cold and moisture, were only to be found in those ships that were free of infection, while they did not at all exist in others subjected to it.

In order to take proper means for avoiding the influence of contagious effluvia, it is of the utmost consequence to ascertain the limits of their action. And Dr Blane alleges, that it has been for want of this knowledge that the plague has on some occasions spread so much. For in consequence of the opinion that the whole surrounding atmosphere was affected, attempts were vainly made to purify it, by large fires in the open air ; while the precautions of avoiding the near approach of the sick, and of confining those in health to their houses, were entirely neglected. These, however, are, he thinks, the only effectual precautions. Here he takes occasion to mention it as being a fact no less curious than important, that the true pestilence has never been known to exist within the tropics ; and
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that hot climates are unfavourable to all sorts of infection of the volatile kind.

The next subject which engages our author's attention is aliment. Of this he treats under the two heads of solid food and drink. As he considers the scurvy, which is the disease most peculiar to a sea-life, to be principally owing to the quality of the food, he thinks it highly important to suggest such alterations and improvements in it as may prevent that destructive disease. These improvements are either articles of common diet, such as melasses and four kraut, intended for the whole ship's company; or those more particularly intended for the sick and the convalescents, as portable soup, dried fruits, rice, and the preserved juice of oranges or lemons.

With regard to drink, he observes, that the most material practical improvement would be, to introduce malt liquor or spruce beer in place of the spirits. Porter can be kept for any length of time in all climates; and some facts are mentioned which incontestably prove its antiscorbutic virtue. Spruce beer is equally salutary, and the materials for making it are easily portable; so that it may be procured

red in all climates. Next to these wine is to be preferred; and decisive proofs are also brought of the great advantage of this over spirits.

Under the head of drink, Dr Blane treats of water, and of the best methods of preserving and purifying it. He considers quicklime as the most effectual preservative of water; and strongly recommends the mixing a pound of it with each butt of water when the butt is filled. Dr Blane here takes notice of the ingenious proposal some time ago made by Mr Henry of Manchester, for precipitating the lime from the water; by which it might be furnished, at the end of a very long period, perfectly preserved, and at the same time free from any impregnation. But although he admits that it is founded on just chemical principles, he expresses a fear that it is too nice and complex to be brought into common practice. This, however, can be no objection to ships of war being furnished with the proper materials for putting it in practice when necessary.

The next chapter treats of cloathing. This, he observes, is necessary in all climates, as it

is hurtful to the health to expose the naked surface of the body, especially in a state of perspiration, even to warm air. When the air is loaded with noxious matter, he thinks clothing may be considered as a filterer, separating the impurities of the air before it comes in contact with the body. Hence, though the cloathing is certainly to be adapted to the climate, it is, he observes, of the utmost consequence, that sufficient and suitable cloathing should be provided. And he gives it as his opinion, that it would be of the utmost consequence to the sea-service, that an uniform should be established for the common men as well as for the officers. This would oblige them to have at all times in their possession a quantity of decent apparel, subject to the inspection of their superiors.

The last chapter of this part contains observations on exercise. As in every ship of war there are a great number of men more than what are necessary to navigate her, there is great hazard of their indulging in indolence; than which nothing is more apt to bring on disease, particularly the scurvy. It should therefore be an object of discipline to prevent

prevent this. As every thing that produces jollity, contentment, and good humour, so far as is consistent with sobriety and regularity, has a favourable effect upon health, he recommends the use of different sports; and he even regrets, that certain rough sports formerly fashionable among the seamen have now unfortunately fallen almost into disuse. And he thinks that the commanders who revive and encourage them, perform an useful service to the fleet. But if evils sometimes arise from want of exertion, there is, he observes, another extreme, perhaps more frequent and pernicious in a sea-life; that is, excess of exercise and of watching. This indeed not unfrequently is unavoidable. But he recommends great tenderness to men in this respect, as nothing has a greater tendency to wear out the constitution than excessive bodily exertion.

Dr Blane's remarks in this part of his work are offered rather in a summary way. And perhaps it may be considered as a sufficient apology for this, that it falls more within the province of officers than of the medical practitioners. The importance of the subject,

however, is a sufficient apology for recommending it on every occasion to the attention of those who are intrusted with the direction of the navy, either in a civil or military capacity. And we are persuaded there are few who will not readily subscribe to his remark, that there is no situation in life in which there is room for more virtues, more conduct, and more address, than that of a sea-officer. The men are thrown upon his humanity and attention in more views than one. They are subject to a more arbitrary exertion of power than the law of a free state authorises in civil life. From considerations of public utility, Britons, in this situation, surrender no inconsiderable share of that liberty which they hold most dear to them. It is the character of seamen to be thoughtless and neglectful of their own interest; they require to be tended like children. But from their usefulness, bravery, and other good qualities, they are intitled to parental tenderness and attention, from the state they protect and the officers they obey. And while it is the duty of the state to make every possible provision for the health and comfort of seamen, one of the chief

excellencies in the character of a good officer, consists in reconciling strict discipline with indulgence and humanity.

To this part of Dr Blane's work is subjoined an appendix, containing a memorial presented by the author to the Admiralty in 1781, and a supplement to that memorial presented in 1782. This memorial states, that in the preceding year there had prevailed a considerable mortality on board his Majesty's ships in the West Indies, nearly one man in seven having died in that time; of whom a very small proportion fell either in battle or in consequence of wounds received in action. This melancholy fact led the author to employ all the attention of which he was capable, in endeavouring to discover the causes of such mortality, and to propose the most effectual remedies. These remedies are the subject of this memorial. For a summary view of them, they may be reduced to the following heads. 1st, The establishment of a certain method of discipline, in order to secure regularity and cleanliness among the men, and to render the ships clean and dry. 2^{dly}, The supply of fruits and other vegetables for
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the cure of scurvy. *3dly*, The substitution of wine or beer for rum. *4thly*, The provision of an adequate quantity of necessaries for the sick. *5thly*, The furnishing to the surgeon a gratuitous supply of some of the most costly articles, such as the Peruvian bark. *6thly*, The curing of particular diseases on board, instead of sending them to hospitals. And, *lastly*, the preventing of filth, crowding, and the mixture of diseases, in hospitals, by proper regulations, and by establishing hospital-ships.

The supplement to this memorial contains a practical confirmation of most of the means proposed above; and the author gives an example in the case of the *Formidable*, of the great and salutary effects resulting from the proposed improvements. There were generally eight hundred men on board this ship: of these not one died of disease from December 1781 to May 1782; and only thirteen, whose complaints were small-pox and ulcers, were sent to hospitals. In the months of May and June, when at Jamaica, there died of disease in this ship three men; and there were sent to the hospital seventeen, most of whom had contracted their sickness on board the

French prizes. This may be considered as an experiment made under the eye of Dr Blane, to ascertain what degree of health it is possible to obtain on board large ships of war, even in the climate of the West Indies, by a strict adherence to the regulations he has proposed. And the success with which this experimental trial has been attended, gives the highest possible encouragement to have these regulations rigidly observed on future occasions.

The third and last part of Dr Blane's work contains practical observations on the diseases most commonly occurring among seamen in warm climates. He regrets that there were several obstacles to his making observations so accurately as he could have wished. These were chiefly the bad accommodation of the sick at some of the hospitals, and the shortness of his stay at any one place. But having practised among great numbers, observations necessarily arose from the comparison of so many cases. And amidst the variety of emergencies and hardships connected with war, nature, he observes, is seen under trials not to be met with in common life. The diseases
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of which he treats in this part of his work are, fevers, fluxes, and the scurvy. We shall here present our readers with some view of his observations on each.

The fevers which occurred most frequently on board the ships, and at the naval hospitals, were, the infectious ship-fever, the bilious remitting fever, and the yellow fever. His description of the first of these, which he considers as being the same with what is commonly called the jail or hospital fever, does not differ materially from that given by Sir John Pringle and Dr Lind. He considers muscular debility, low delirium, petechiæ, and a peculiar feeling of the skin, as its chief characteristic symptoms. His ideas concerning the nature of delirium are somewhat peculiar. It seems, says he, chiefly to consist in a false reference of our sensations, whether external or internal. When any painful impression is made by an external body, the patient, in a state of delirium, does not refer it justly to the part affected; but the general agitation and incoherence of sentiments are aggravated for the time. He has known instances where a degree of heat applied to the

extremities sufficient to blister them, had not the effect of making the part shrink, though the raving and general uneasiness were increased. In like manner, with regard to internal sensations, when an irritation is excited to expel the urine or feces, the mind does not recognise it as such : but from a sense of uneasiness, probably mistaken for something else, an effort is made to relieve nature, which is done without proper consciousness ; and certain symptoms are produced which are well known marks of danger in this fever. In watching those under the influence of delirium, he has observed it increase when any particular want of nature urged, the patient being incapable of procuring himself any immediate relief ; but he would become calm after voiding urine or feces, or after receiving something to drink, according to the particular want that was present at the time. So great, he observes, is the disorder in the common course of sensation in this fever, that a person ill of it has been even unconscious of inflammations in vital parts ; which, in the natural state of the nerves, would have excited the most acute pain, and would have been distinctly

distinctly referred to the part affected, but which were not discovered till after death. It would, he adds, appear, that the motions excited in the brain and nerves in such cases, instead of producing the sensation naturally belonging to them, serve to excite disagreeable emotions of a different kind; and in these the delirium consists.

After some other observations on the characterising symptoms of this fever, the author next points out the different modifications of it, from the heat of the climate, and some marks distinguishing it from the inflammatory fever. He then proceeds to the treatment; the first part of which consists in attempting to cut the disease short in the beginning, by procuring a remission by means of evacuations, and the exciting a sweat by antimonial and neutral medicines combined with a gentle opiate. If these means prove successful, the Peruvian bark should be thrown in without loss of time. But though they be not successful, the future progress of the disease will, he thinks, be safer. The treatment then consists in avoiding evacuations, except supporting a gentle diaphoresis. But when

the disease comes to be a little farther advanced, it is, he thinks, advisable to lay aside antimonial and neutral medicines. Dr Blane was led to think well of diaphoretics in this fever, both from experience, and also from observing, that in those cases for which nature does most, there was an universal warm sweat, which was generally of an offensive smell. In such cases he thinks little medical assistance is necessary, excepting the supporting perspiration by warm diluents : And he adds, that there is no circumstance in which the judgment of a physician is more shown than in distinguishing those cases in which his chief business is to look on, when nature being equal to the task is not to be disturbed by the officious interposition of art.

After antimonial medicines have been laid aside, camphor and pediluvia, or fomentations, may be employed to preserve the skin soft. Dr Blane here makes a practical use of his opinion concerning delirium. For as he thinks it consists in a depravation of the consciousness of the natural wants, and therefore in an inability to relieve them, he recommends that an unremitting attention should
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be paid to the patient's feelings, and to all his possible wants ; since those natural notices and instinctive cravings which occur in health are now wanting, in consequence of the depraved state of sensation. He condemns an early and indiscriminate use of the Peruvian bark : but he observes, that in the more advanced stages of the fever, an absolute remission is not necessary for its administration ; and when he has been very anxious to give it, on account of the fatal tendency of fevers in hot climates, he has either joined it with an antimonial or neutral medicine, or alternated its use with these, to take off the heating effects it might otherwise have produced.

In the more advanced stages of this disease, in which the principal symptoms are tremors, agitation, and low delirium, he recommends blisters and opiates. But he lays the chief stress on the latter ; and recommends either small doses of laudanum or of compound officinals which contain it, given at the interval of a few hours. In this state he thinks castor an useful addition ; and, when there is a coldness and languid circulation, he advises wine and serpentaria. As patients are apt to sink
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from weakness in the convalescent state, especially circumstanced as seamen are, he rests a great deal on the judicious administration of nourishment at this time.

The next species of fever of which he treats, is the bilious remitting fever. This is distinguished from that last described, by its tendency to remit, by the bilious vomiting and looseness, by more violent delirium and headach, and by its being attended with less debility. This is the fever to which those men are chiefly subjected, in warm climates, who are sent to wood and water in the vicinity of marshes. The treatment of it differs from the foregoing form of fever, in requiring more evacuation, especially by the bowels; and it not unfrequently happens that blood-letting is proper on the first attack. When, from sickness, and a sense of weight about the præcordia, there is reason to suspect that the excretion of bile is retarded, Dr Blane recommends calomel in preference to other purgatives: He alleges, that the stimulus of it is so extensive as to loosen and bring away bile when other purgatives have failed of that effect, and that it will be more effectual for
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this purpose, if given in a dose from five to ten grains, and followed in a few hours by some other purgative. He thinks that antimonial medicines answer better in this than in any other species of fever, acting chiefly by the different evacuations they produce. He tells us, that when a number of men were sent to the hospital with this fever, he had an opportunity of comparing tartar emetic with James's powder, by giving the first medicine to the one half, and the last to the other. From this trial he could perceive no ground for preferring the one to the other. When this fever happens to be protracted for a considerable length of time, the treatment then proper comes more and more to resemble that of the fever first described. The great object in the treatment is, first to procure a remission, and then to throw in the Peruvian bark.

The last species of fever of which Dr Blane treats, and which also frequently occurred at the naval hospitals, is the yellow fever. This, he observes, is more peculiar to a hot climate than any other ; but is hardly known excepting in sea-port towns, among those who have
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newly arrived from a temperate or cold climate. The most remarkable circumstance in the description of this fever is its great rapidity, as it generally proves fatal in two or three days. The most characteristic symptoms of it are, the universal yellowness of the skin, and the vomiting of a black-coloured matter. This black colour is found to be owing to small dark flakes resembling grounds of coffee, and seems to be blood a little altered, which had oozed from the surface of the stomach. Dr Blane gives a very full description of this fever, and a very affecting account of the sufferings of those who are attacked with it; but as we cannot enter into the detail, we must refer our readers to the work itself.

With respect to the treatment of the yellow fever, he expresses his regret that it is so little the object of art, since in most cases it baffles every remedy that has yet been discovered. There can hardly, he observes, be a doubt, that some particular diseases are in their own nature determinedly fatal; the animal functions from the first being so deranged that there are no possible means in nature capable of

of controlling the series of morbid motions which lead to dissolution. Of this kind appear to be the greater number of cases of the plague, many of the malignant small-pox, and some fevers, particularly of that kind now under consideration. It is extremely difficult to ascertain such cases from observation; and it may be said, that the opinion of the existence of them is favourable to ignorance and indolence. But, on the other hand, it is much to be questioned, whether more harm has not been done by being too officious, than by a diffidence in art, and trusting to the powers of unassisted nature. Were we thoroughly acquainted with the animal œconomy, we should perceive *à priori* in what instances the seeds of disease would either operate, so as necessarily to terminate in death, or when they are within the command of art. But from our ignorance of the secret operations of the living body, we can derive little or no information from this source; so that our only grounds of judging are observation and experience concerning the usual event of disease, and the effects of remedies.

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One of the great difficulties in the cure of this disease is, he observes, a constant and unconquerable irritability of the stomach. In abating this symptom, he found a blister applied to the region of the stomach of more service than any other remedy : and when the stomach can be brought to bear medicine, a free use of the Peruvian bark was evidently serviceable, and was indeed the only remedy to be relied on. This disease does not, he tells us, bear evacuations, excepting in the very beginning, nor is there the same necessity for them as in the fever last described : for in general there is no increased secretion of bile ; and when such an increase does take place, it is always a favourable circumstance.

Dr Blane concludes the subject of fevers with a section on intermittents. For though these be not, he tells us, so frequent in a hot climate as in some cold and temperate climates, yet they are apt to be more obstinate. From having in these cases frequently experienced the inefficacy of the Peruvian bark, he was tempted to think, either that the reputation of this medicine is not so well founded as is commonly believed, or that the bark com-

commonly in use at these times is not so good as that employed by the physicians who first established its character. He is inclined to think that they may have used what is now generally known under the title of the red bark, the employment of which has lately been revived by Dr William Saunders of London. Of this bark he had no opportunity of making trials; but the numerous instances in which the common pale kind failed became extremely distressing both to the medical practitioner and to the patient. And his chief intention in this section is to recommend the flowers of zinc in these cases; a remedy to which he had first recourse by the advice of Dr Hendy of Barbadoes, and by means of which he cured three out of five of these intermittents which had resisted the bark. This article was given in doses of two, three, or four grains, thrice a day, with the most unequivocal evidence of success. And similar success, we are told, was also derived from this metal when given under the form of white vitriol. But Dr Blane limits the use of the zinc to cases of long continuance.

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The next disease which is the subject of observation is the dysentery. This, he alleges, arises from the same circumstances, and is owing to the same general causes as fevers. He thinks it may be considered as fever attended with peculiar symptoms, in consequence of a determination to the bowels, in the same manner as fevers in cold climates are attended with rheumatism or catarrh. The circumstances determining the body to dysentery, rather than proper fever, are climate and season, peculiarity of constitution, the nature of the occasional cause, and the presence of infection. He divides this disease into the acute dysentery, strictly so called, and chronic fluxes, in consequence either of dysentery or of neglected diarrhoeas. It appears from numerous dissections, of which he gives a particular description, that the deaths of those patients were occasioned by incurable ulcerations in the great intestines.

With regard to the treatment, he observes, that there are few diseases in which a prudent application of art is more useful, or in which early means of relief are more requisite. In the acute state, he rests the cure on early and
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brisk evacuation, by saline and antimonial medicines, and the exciting a sweat by ipecacuanha conjoined with an opiate. If the disease should not be removed by these means, he recommends frequent small doses of ipecacuanha. He cautions young practitioners against the free and indiscriminate use of opium. In the removal of tormina and tenesmus, he found the warm bath and blisters of great service.

He next treats of the dysentery in its chronic state. In the administration of opium in this state of the affection, he cautions the practitioner to premise sufficient evacuation, to accompany the opiate with a laxative medicine in order to obviate costiveness; or with an antimonial in order to prevent the feverish accession which it might excite. In enumerating the causes which keep up the chronic flux, he mentions too great secretion of bile, ulcers in the intestines, a lenteric state of the bowels, and the retention of scybala. He recommends particular modes of cure appropriated to each of these cases. But for these we must refer our readers to the work itself; and shall only observe, that he considers the

success in practice as very much depending on being able to ascertain the particular cause, on which the case to be treated, depends.

The next chapter of this work treats of the scurvy. On this subject, Dr Blane is not so full as on the former diseases. As he considers the cure of it to depend chiefly on diet, remarks concerning it naturally occurred in the former part of his work. Besides this, he also observes, that Dr Lind has so far exhausted the subject as to leave little to be said. He thinks that a vitiated or a scanty diet are the chief causes of scurvy : but he is of opinion, that it is also promoted by cold, moisture, filth, sloth, and dejection of mind.

He is inclined to think that hard labour tends to prevent it. With regard to the cure, he brings facts in proof of the superiority of fresh vegetables over fresh animal-food ; and from repeated and extensive experience, he gives a preference to fruits of the lemon and orange kind over every other antiscorbutic. He, however, candidly acknowledges his ignorance with respect to the method in which these fruits operate in curing the disease. And he affirms, that the recent juice
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of these fruits is highly useful when externally applied to those obstinate scorbutic ulcers which are so troublesome in hot climates. The infusion or essence of malt, which has been considered as a specific in this disease, he found to be possessed of only very inconsiderable virtues, when compared with the juices of the fruits already mentioned. In recent cases, however, and in scorbutic ulcers, it was found to be evidently advantageous. In these ulcers, the Peruvian bark was found to be of little use; but opium given internally was remarkably serviceable. He observes, that the most rapid recoveries from the scurvy were in those cases in which a spontaneous diarrhœa occurred. In consequence of this, some of the symptoms, such as the livid appearance on the legs, would vanish even in a few hours. This he supposes to happen in consequence of an absorption excited by purging, in the same manner as sometimes occurs in the cure of dropsy. In treating of this disease, Dr Blane enumerates several uncommon symptoms, and makes some remarks upon them. But for these we must refer our readers to the work itself

This work is concluded by a chapter on the wounds received in the actions of April 1782. He gives the following state of the killed and wounded in the two battles of that month :

Killed outright,	266
Died of their wounds on board,	67
Died of their wounds in the hospital,	21

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The whole number wounded was 810. The remarks in this chapter are chiefly with regard to the locked jaw ; eighteen cases of that affection having occurred among the wounded, of which fifteen proved fatal. The three that survived this affection, whose cases are detailed at full length, were treated with opium and the warm bath. He observes, that the locked jaw takes place as often in those wounds which heal in a favourable manner as in those which are difficult of cure. As a proof that this fatal symptom does not arise from the immediate irritation of the wound, but that it proceeds from a cause existing for some time in the constitution, he tells us, that it is not stopped by the amputation of the wounded

wounded member ; and that it has sometimes been known to come on even after the wound has been cicatrized.

Dr Blane subjoins to his observations on locked jaw, some remarks on those accidents which happen from what is called the wind of a ball, and on the scorches which happen from gun-powder. He mentions several facts to prove, that parts may be injured, nay that instantaneous death may even be produced, by a cannon-ball passing very near the body. He contends, that this is most apt to prove fatal when it passes near the stomach. With regard to scorches from gun-powder, he observes, that from want of due caution, a great proportion of the killed and wounded in sea-battles arises from accidents of this kind. But he assigns several reasons why they were not so frequent in the battles of April 1782 as in the former parts of the war. He found linseed-oil mixed with lime-water or with ceruse, to be the best application in these cases.

Dr Blane concludes this chapter with some remarks on the necessity of stopping hæmorrhage in the time of action. It frequently happens, that men bleed to death before as-

fiſtance can be procured ; and in other caſes, they loſe ſo much blood as to be unable to go through an operation. To prevent this, it has been propoſed to make each man carry about him a garter or piece of rope-yarn, to bind up a limb in caſe of profuſe bleeding. To this, he obſerves, it may be objected, that from its ſolemnity, it may be apt to intimidate common men. But he thinks that the officers at leaſt ſhould make uſe of ſome precaution, as many of them, and thoſe of the higheſt rank, are ſtationed on the quarter-deck, which is one of the moſt expoſed ſituations, and are far removed from the cock-pit, where the ſurgeon and his aſſiſtants are placed. Want of attention to this circumſtance was, he obſerves, the cauſe of the death of that brave officer Captain Bayne of the *Alfred*, who having had his knee ſo ſhattered that it became neceſſary to amputate the limb, expired under the operation, in conſequence of the weakneſs induced by loſs of blood in carrying him ſo far. As Admiral Rodney allowed Dr Blane the honour of being at his ſide in the time of action, he carried in his pocket ſeveral tourniquets of a ſimple conſtruction, leſt
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accidents to any person on the quarter-deck should have required their use. There can, we apprehend, be no doubt of the propriety of recommending that this example should be followed in every action, by entrusting intelligent men in different parts of the ship with similar instruments, to be used when occasion may require.

He tells us, that the method of taking up vessels by the tenaculum was found to answer extremely well. But he thinks, that from want of light and of steadiness, it is hardly to be attempted in time of action. And he adds, that it was found to be chiefly successful in the hospitals.

He alleges, that wounds in the head and trunk heal more readily in hot than in cold climates ; but that those in the extremities are there more difficult of cure. He adds, that in reasoning upon this subject, it may be said, that as healing depends on a certain degree of vigour in the powers of life, this should not err either on the side of excess or defect. If it be too great, as in the case of a hale plethoric constitution in a cold climate, too much inflammation is apt to be excited : and if it

be too feeble, as happens in hot climates, in the lower extremities, which are far removed from the source of life and circulation, the salutary effort is not strong enough to generate new organized parts. But in the trunk of the body, in such a climate, the powers of the animal œconomy are, he observes, in that just medium which is most favourable to this operation of nature.

How far this reasoning is strictly well founded, we will not pretend to say. But the candid reader will at least admit that it is ingenious. But ingenuity is by no means to be considered as the principal merit of Dr Blane's work. He has presented us with the fruits of faithful and accurate observation, necessarily suggesting many particulars of the highest importance, both in the cure of the diseases most common at sea, and in the prevention of those affections proving most fatal to fleets and armies. In our opinion, many of his suggestions with respect to future improvements well deserve the most serious attention, not only from medical practitioners, but even from the legislature itself. And whether the proposals he has made shall in
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future be properly carried into execution or not, yet we cannot help thinking that he is well intitled to the thanks of his country for the unwearied attention which he has evidently bestowed in discharging the duties of his office as physician to the fleet, and for at least endeavouring, by means of the publication of which we have here given an analysis, to render his observations useful to posterity.

II.

II.

Traité sur le Vénin de la Vipere, sur les Poisons Americains, sur le Laurier-Cerise, et sur quelques autres Poisons Vegetaux. On y a joint des Observations sur la Structure Primitive du Corps Animal. Par M. Felix Fontana, Physicien de S. A. R. l'Archiduc Grand-Duc de Toscane, et Directeur de son Cabinet d'Histoire Naturelle. 4to, Florence.

THE work now before us has justly claimed no inconsiderable share of the attention of philosophers, both for its originality and for the number of important discoveries which it contains: And these discoveries are not the production of a fanciful imagination, but the fruit of experiment. These experiments, which on the subject of the viper alone exceed six thousand in point of number, have been devised with singular ingenuity, executed

ted with astonishing accuracy, and crowned with uncommon success. Hence while they lead to the most satisfactory refutation of numberless errors, they afford also a luminous display of new facts.

The first part of this work was published some years ago in the Italian language. It afterwards appeared in French, in the form now before us. And of late the whole has been translated into English.

This curious and interesting work is divided into four parts. In a short introduction prefixed to the first of these, Mr Fontana shows how little authors agree among themselves respecting the poison of the viper. These differences have, he observes, taken place among men of accuracy and candor, not merely with regard to matters of opinion, but even with regard to those things exposed as it were to the eye. When he found that the observations of so celebrated a writer as Dr Mead clashed with those of Redi, he concluded, that, without being wanting in respect to the authority of these great men, it was necessary he should trust solely to his own eyes. And if this should lead him to repeat truths former-
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ly published by other observers, it will readily be pardoned by the candid reader.

He sets out by giving a brief account of the number, structure, and use of the teeth of the viper. This animal has three orders of teeth. The canine teeth, which are sometimes found to the number of four, seldom of three, sometimes of two. At the basis of these large teeth, and quite out of the sockets, there are invariably six or seven, sometimes even eight, very small teeth. They are fastened at their basis by a kind of web of a fine and soft membranous texture. They diminish in size in proportion as they are more distant from the sockets of the canine teeth: the smallest are tender and imperfect, being as it were mucous, particularly at their basis; and our author thinks that they in reality owe their formation to a whitish and gelatinous matter. The third order are still more minute than the preceding. They resemble small hooks, and are strongly fixed, to the number of ten, eleven, sometimes of fifteen, in two small pretty long parallel bones, which, on each side, form the upper jaw; and
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of eight, nine, sometimes of twelve, in each of the bones which form the lower jaw.

The canine teeth are seldom more than three lines, Paris measure, in length. The basis of each is not more than half a line in diameter, and its figure is that of a horn, a little flattened and somewhat bent towards its basis. Mr Fontana very particularly describes the tubulated structure of these teeth, and shows that they have a double pipe almost their whole length; a circumstance hitherto entirely unknown to observers. The second order of teeth very much resemble these, both in their inner and outer structure. The two conduits, internal and external, are also seen in them. It is not, however, the same with the very small teeth fixed in both jaws: these have no channel, and have no kind of opening either at the point or basis.

When the viper wishes to bite, its canine teeth are raised by a peculiar mechanism. And Mr Fontana has no doubt in affirming, contrary to the opinion of some other observers, that the viper, instead of simply biting with two teeth, one at each side, must seize equally with all those that are firmly fixed
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in the sockets. From the figure of these teeth, the animal can never bite without a risk of losing some of them. And he observes, that it is with great sagacity that Nicholls conjectures that nature has intended the second order of teeth to replace, when there is a necessity for it, those which the viper loses from time to time. The last and smaller teeth he thinks are certainly not employed in biting; but are intended to draw nearer to the throat, and to hold firmer the animal the viper has already seized.

After his observations on the teeth themselves, he next makes some remarks on the yellow liquor that flows from the tooth of the viper. The singular structure of the canine teeth is a powerful persuasive of its being from them that the yellow liquor flows. To be assured of this circumstance, Mr Fontana bound the head of a viper which he had just killed to a table. He gently compressed the palate with a blunted iron; and he immediately saw at the elliptical hole at the point of the tooth, a yellow coloured fluid, lightly transparent, which first formed itself into a drop, and then glided along the external sur-

face of the tooth. He afterwards closed the small opening with wax, and then compressed the palate, but not a particle of the venom showed itself. He was likewise able, although with difficulty, to close the hole at the basis of the tooth with wax, and could never then force a drop of venom from the point. This yellow liquor, gliding along the tooth of the viper when alive, imperceptibly fills the sac at its root; which led Redi into an error on this subject, who supposed that bag to furnish this fluid.

Having refuted this opinion of Redi, he next inquires into the part where the reservoir of this yellow fluid is seated. Having observed a small hole placed at the anterior part of the maxillary bone, within the sheath and at the side of the basis of the canine teeth, he endeavoured to introduce into it a very fine fox's hair, and at length succeeded in passing it quite a-cross the sheath by a long membranous conduit into a small vesicle, placed beneath the muscles of the upper jaw on its lateral part. This he describes as being a membranous bag of a very strong and close texture, which is again partly covered by
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tendinous fibres. Its shape is nearly that of an equilateral triangle. This vesicle is three or four lines in length, and two at most in breadth at its basis. It never contains more than four or five drops of the venom, which is forced from it chiefly by the action of a strong muscle covering it for almost the whole of its length. He concludes, that this muscle is principally intended to force the venom from its reservoir, because it is fastened to each jaw in such a manner as to be of little use to the animal in closing its mouth. Mr Fontana lays it down as a certain conclusion, that the poison flows from the point of the tooth, and not from the bag, whether the viper causes it to flow in biting, or whether a compression is intentionally made on the vesicle mentioned above.

The experiments made by Mr Fontana agree perfectly with those of Redi and Mead, in demonstrating that the yellow fluid discharged from the tooth of the viper, when introduced into the blood by the medium of a wound, is the cause of death: and he expresses his surprize that some celebrated writers should have continued to persuade themselves,

selves, that the mortal effects from the bite of the viper are to be attributed to the rage of the animal, and to the power of the exalted saliva. He has found, from decisive experiments, that neither the foam, nor the other humours of the viper's mouth, are capable of causing death when introduced into the blood by the medium of a wound ; while, on the other hand, the yellow fluid mentioned above, taken from an animal put to death in the most tranquil state, and even after the head had been almost dried, invariably killed animals when applied in a similar manner.

From a series of ingenious and convincing experiments, our author concludes, contrary to the opinions of Dr Mead and others, that the poison of the viper is not deleterious to its own species. He has found also, that there are some other species of animals which are not affected by this poison. This particularly holds with respect to the leech, to the snail, and to several other species of snakes which are not of a venomous nature, as the aspic, the cecilia, and the adder. This poison appears also to have at least but very little effect upon the turtle. But he found that it uni-

verfally killed every animal of warm blood on which he made any trials.

It has been maintained by many, that the poifon of the viper is an acid : And Dr Mead alleges, that in his experiments it changed the blue colour of turnfole to red. Others have pretended that it is an alkaline. But the experiments with which Mr Fontana here pre-fents us, afford incontestable proof that no falt, either acid, alkaline, or neutral, exists in this fluid. He has alfo found, that when taken into the mouth, even in an undiluted ftate, it has no determinate tafte, but fomewhat re-fembles the almoft infenfible flavour of the frefh fat of animals. From more than an hundred trials, he found that it had never any effect upon the tongue, either in exciting fwelling, pain, or inflammation. He has alfo applied it to the eyes, the nofe, and other very fenfible parts of a great variety of different animals, without being able to difcover that they fuffered even the fmalleft inconvenience from it. And, from the avidity with which it was fwallowed by dogs, who never failed to lick their lips after it, and to manifef signs of the greateft fatisfaction, he concludes,

cludes, that it is even highly agreeable to the taste of these animals.

From Mr Fontana's experiments, the poison of the viper appears to be heavier than water ; in this respect differing from oils and animal fats. And it also appears to have no more inflammability than most other animal fluids ; and in this it resembles the poison of the bee, the wasp, the hornet, and the scorpion, which all consume and dry in the fire without kindling into a flame. He has found, that the poison of the viper preserves its activity in the cavity of the tooth even for several years. For if the tooth be put into warm water, the poison is soon dissolved, and is capable of killing animals. Those impostors who, to demonstrate the power of certain antidotes, allow themselves to be bit by vipers, effect this by previously stopping with a certain paste those holes in the teeth through which the poison should pass. After relating the experiments which demonstrate these facts, our author endeavours to show that the injury done by the leech and ox-fly, depends entirely upon the wound inflicted, and not upon any poison introduced.

Our author concludes the first part of the treatise with an inquiry into the cause of the death of those animals who are killed by the poison of the viper. Here he distinctly states, and successfully refutes, a variety of opinions which have been proposed on this subject. And he observes, that if we reflect on the effects of opium, its mode of action may instruct us a little on that of the poison of the viper. That vegetable juice begins by rendering an animal weak and torpid, and kills by destroying the irritability of the muscular fibres. The symptoms and accidents which follow the bite of the viper do not differ essentially from these, and may lead to the suspicion that its poison kills by totally destroying the irritability of the fibres. This suspicion he endeavours to confirm by a variety of observations made on frogs bit by vipers. And he thinks that, from these observations, it is almost impossible to deny, that the poison of the viper destroys irritability, by conveying a putrefactive principle into the flesh of animals that have been bit, and into their fluids.

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In the second part of this work, Mr Fontana, after some general observations on the sources of error, proceeds to examine whether the volatile alkali be, as some have alleged, a certain remedy against the bite of the viper. For this purpose, he first made experiments on a dozen of sparrows, each bit by a single viper, and only once. From these experiments, of which we cannot here pretend to give a detail, he draws the following conclusions: *1st*, That the vipers he employed were sufficiently provided with venom to kill sparrows. *2dly*, That as soon as the poison is introduced into the limb of the animal, it swells in a sensible degree, changes its colour, and becomes somewhat livid. *3dly*, That there is no certainty of the introduction of the poison, from the viper seizing an animal between its teeth and closing its mouth. *4thly*, That the fluid volatile alkali does not preserve the lives of the sparrows bit by the viper. *5thly*, That the volatile alkali given internally to sparrows previously bit, is probably even hurtful to them; or at least their more speedy death leads to this suspicion. From a very great number of experiments made on pigeons,

he concludes: *1st*, That other circumstances being equal, the larger the viper the more violent the disease, and the more speedy the death. *2dly*, That the disease increases in violence in proportion as the viper is more enraged. *3dly*, That it increases in proportion to the time the viper compresses between its teeth the animal it has bit. *4thly*, That the disease of the part bitten seems to be greater in proportion to the time that the pigeon survives. *5thly*, That in some animals black and livid blood flows from the wound as soon as it is made. *6thly*, That in others, on the contrary, it flows red, and preserves that colour. *7thly*, That the animals from which the red blood flows die later than those from which it flows black and livid. *8thly*, That sometimes with the blood the poison also flows out, preserving its colour and qualities. In this case, the animal not only sometimes survives, or dies at a later period, but sometimes even appears to have suffered no injury. He found, from a very great number of experiments on pigeons, that the volatile alkali had no effect in recovering them when bit by a viper; but it did not appear whether

whether it was hurtful or not. From a number of experiments on fowls, he found, that in general they die much later than pigeons; and that the volatile alkali is not only of no use, but that it is probably even hurtful to them.

After having been satisfied from these experiments, of the inefficacy of the volatile alkali with birds, he next resolved to make some experiments on quadrupeds; and for this purpose he employed guinea-pigs, rabbits, cats, and dogs. From these experiments he thinks there can be no doubt of the inefficacy of the volatile alkali to these animals: On the contrary, instead of diminishing the disease, it seems to strengthen and increase it. He concludes this subject by relating the experiments he made on animals of cold blood; and for this purpose he employed frogs. From these also he thinks there can be no doubt of the inutility of the fluid volatile alkali. It is highly probable that, when given internally to frogs, it increases the disease caused by the venom instead of diminishing it: for it is certain that then the animal dies sooner.

It was found from a number of experiments, that the first and second bites of a viper were nearly equal with respect to their deleterious effects; but that the effects of future ones were evidently less considerable: and our author concludes, that the bite of a viper when enraged is more dangerous, only because it then forces its teeth deeper into the animal; because it keeps them there for a longer time; and because, without letting go the part that is bit, it continues to compress the vesicle containing the poison. Thus the bite of a viper enraged may be considered as equal to a succession of bites from one in a different state. He next endeavoured to determine, if the disease would be equal, whether different parts were bit by a viper, or a single part an equal number of times. And he found that the animal dies sooner when bit a certain number of times in two parts, than when the same number of bites is confined to one; but that in this case the single part bit is subjected to a much more violent topical disease.

It was but natural to imagine, that the effect of the poison of the viper would be considerably

siderably varied when acting on different parts of the body. It is well known that an animal is formed of organs and parts differently organized. There are parts that have vessels and nerves without having muscles, and these are in different portions and differently distributed; there are others again that have no nerves, and, if they have any vessels, have only a very few fine capillary ones. From the variety thence arising, the same quantity of venom conveyed into a wound made in an animal, might produce either death, a slight disease, or no disease at all. To throw light on this important subject, Mr Fontana performed a very great variety of experiments. The limits of our work will hardly permit us to give even the result of all these; but we shall briefly mention some of the principal. From experiments on the skin, he found that the poison, by its action there, is not mortal, and that the disease is confined to the part of the skin touched by the poison. This poison appeared also not to be mortal when it penetrated no farther than the adipose membrane; and it also appeared, that when simply applied to muscular fibres, it is innocent; but
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if the muscles bleed even a little, death is the consequence.

After a variety of experiments, showing the effect of this poison when acting on the breast, the belly, the intestines, the liver, the ears, the pericranium, the bones, the brain, the marrow, the cornea, the comb and gills of fowls, the neck, the nose, and various other parts, for which we must refer our readers to the work itself, he bestows a whole chapter in endeavouring to ascertain the influence of this poison on the tendons: and from a number of decisive experiments, he concludes, that a tendon is not susceptible of the action of this poison; but that when a tendon is completely stripped of its tunic, the animal almost invariably dies without the action of any poison.

The third part of this work, Mr Fontana considers as particularly interesting, since the experiments tend, he thinks, to throw light on the nature of the poison. Although we are not, perhaps, he observes, permitted to know what the nature of the poison of the viper is, which when introduced into a living animal causes its death, we may yet, he observes,

ferves, inquire into the quantity of this poison which is necessary to kill an animal of a certain size. From a number of experiments, he concludes, that the thousandth part of a grain of this poison introduced immediately into the muscles by an incision, may be sufficient to kill a sparrow, although this animal does not always die from the introduction of such a quantity: and he concludes also, that it requires about four times as much to kill a pigeon, and, in order to be certain of the effect, six times as much. The sparrows on which he made his experiments weighed somewhat less than an ounce each, and the pigeons somewhat more than six ounces each. Judging of the quantity requisite to kill other animals in the same proportion, he infers, that it will require about twelve grains to kill an ox of a moderate size, and about two grains and a half to kill a man.

Mr Fontana's next experiments were made with the view of determining the time requisite for the effects of the poison of the viper to become obvious. For this purpose, he thought it first necessary to observe those changes which the poison would occasion
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when introduced into a part cut from an animal, but still warm and palpitating ; and from repeated trials, he found, that on parts even in this condition it produces no sensible change whatever : Nay, although the part was not removed, but left connected by the bone alone, the bite of a viper in parts below produced no effect. From this he concludes, that the poison of the viper does not act by a simple mechanical motion, or by a simple mixture of fluids ; nor does its action depend on an effect in chemistry, such as is brought about, for example, by the contact of an acid with an alkaline.

To determine the time required by the poison of the viper to produce its effect after being introduced into a wound, he cut off the legs of pigeons at different periods after they were bit. From these experiments, it evidently appeared, that the action of the poison on the part bitten is not instantaneous, but that from fifteen to twenty seconds is required in order to give manifest tokens of disease. His next inquiry was to determine, whether the death of animals bit by the viper be occasioned by the local disease, or by a disorder
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excited in some of the most essential principles of life: and from amputating the legs that have been bit, at different periods after the bite, he concludes, that pigeons die, independently of the local disease, by an interior derangement speedily communicated to the whole system. He also found, that this internal derangement, as well as the local affection of the part bit, is not instantaneous, but that the former, as well as the latter, requires from fifteen to twenty seconds for its production; and that the sooner the part bitten is amputated, the later the death of the animal occurs, if it occurs at all. Hence, then, it appears, that these two diseases accompany each other, and that the venom produces both within the same space of time. With respect to the local disease, Mr Fontana imagines, that all the efforts made by an animal which has been bit by a viper are directed to the discharging of the blood and humours that are affected by the noxious principle which the latter conveys by its poison, and to throw them off as much as it can on the part that has been bit. And, from attending to the local appearances which take place in some
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of those cases where animals recover, he was still farther confirmed in his opinion, that the local disease is not a mechanical effect of the introduction of the venom into the part, but is rather the means which the vital principle employs to drive towards the exterior parts the morbidic humour that circulates in the fluids, and to relieve from it those organs which are most essential to the preservation of the animal.

From a very great variety of experiments made with the view of determining the action of the poison of the viper, on the nerves of animals, and on their blood, of which we cannot here pretend to give even an abridged view, Mr Fontana concludes, that the poison of the viper is a substance perfectly innocent to the nerves; that it does not occasion in them any sensible change; that they are not even a means of conveying its influence to the animal; and, in short, that the nervous system does not more concur in the production of that disease, than the tendons, or any other insensible part of the animal. On the other hand, from all his experiments on the blood, and particularly from the injection of the

the poison into the blood-vessels, he concludes, that the action of this poison is immediately exerted on the blood itself. This fluid, he observes, is alone changed by the poison ; this fluid conveys the poison into the animal, and diffuses it over the whole body. The action of the poison on the system, and its effects on the blood, are almost at the same instant. The colour of this fluid is suddenly changed ; it loses that redness which is natural to it, and becomes suddenly black and livid, To this first effect, there soon succeeds a second ; the blood is very quickly coagulated, particularly in the lungs, in the auricles of the heart, and in the heart itself. But the whole mass of blood is not, he observes, coagulated in the animal ; a part of it appears even in a dissolved state. The red and glutinous parts alone form the coagulum ; the serous part is even more fluid than before. And if the coagulated part be left for some time in water, it loses the black colour it had contracted, deposits the red part, and leaves a tenacious white fibrous substance similar to a polypus.

The blood, partly coagulated and partly dissolved, must produce very violent disorder
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in the animal. The part bit by the viper swells very speedily, and becomes by degrees livid. The serous part transfuses into the cellular membrane, which it entirely fills. Almost instantly after the injection of the poison into the jugular vein, the blood coagulates in the lungs; the vessels of which are filled and distended with this fluid in a black and coagulated state. In short, the circulation is totally interrupted, and the animal dies.

When Mr Fontana wrote the first part of this work, he was of opinion that the poison of the viper acted immediately on the irritability of the muscles; and that the animal died from the loss of irritability in its fibres. But future experiments have satisfied him, that the destruction of irritability is rather an effect than a cause, being only a consequence of the change caused in the blood by the poison. That fluid, partly dissolved and partly coagulated, is disposed to a speedy putrefaction; and being pent up in the vessels, corrupts and decomposes whatever it meets with.

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In this manner he supposes it is that animals of warm blood die from the bite of the viper: But in cold animals the case is not the same. These, as frogs, may live a certain time without the circulation of the blood, and without respiration. It is entirely, he thinks, on this account that the poison of the viper operates upon them with less activity than on warm animals, and that, in proportion to their size, they survive longer. This consequence naturally results from the principle of life in them being less intimately connected with the circulation of the fluids.

In the fourth part of this treatise, Mr Fontana enters upon an examination of different remedies employed against the bite of the viper. From a very great number of experiments, he was fully assured of the inefficacy not only of the volatile alkali, but also of the most active acids, the vitriolic, the nitrous, the phosphoric, and the like. He tried also cantharides, Peruvian bark, deep scarification, the actual cautery, theriaca, the fat of the viper, the application of leeches, sucking the part bitten; but without being able to obtain the desired effect. On the contrary, some

of them were evidently attended with bad consequences. Having observed that dogs and cats recovered with greater facility in proportion to the violence of their vomiting, he was led to make trial of emetics. Several of his experiments were so far favourable, that he cannot take upon him to assert that tartar emetic is entirely useless; but it is certainly, he observes, no infallible remedy. Plunging the part that had been bit into warm water, and keeping it there, appeared to be truly advantageous: And although not a certain remedy, it is always, he observes, attended with a greater or less degree of advantage. Amputating the part bit, if performed sufficiently early, was always effectual; and the same consequence was also observed in a variety of experiments with pigeons, merely from putting a ligature round the limb, and keeping it there for some time.

On the use of ligatures round the limb that has been bit, as a means of combating the poison of the viper, a great number of additional experiments are related in the succeeding chapter; in which Mr Fontana proposes to consider whether the bite of the viper be naturally

naturally fatal to man. For a considerable time after he had made these experiments, showing the good effects of the ligature, he was ignorant that it had been employed or recommended by any other practitioner. But he at length found that it had been mentioned by the celebrated Koempfer. By that author, however, several things are described as equally necessary. He begins by directing a ligature above the part bitten; but he has then recourse to scarifications, to squeezing the blood from the wounded part, to covering it with theriaca, and to the internal use of sudorifics. Hence it was impossible to say what good may have been obtained from each. But from the experiments here related, made on fowls, guinea-pigs, rabbits, and other animals, bit by vipers, where the ligature alone was employed, the advantages of this practice are abundantly manifest. Hence he infers its utility with the human species. The application of common oil, at one time much celebrated in England, he considers as being in reality of no use. But he has no doubt in asserting, that the bite of the viper is by no means absolute-

ly mortal to the human species. He is of opinion, that those have been much mistaken who have regarded the disease caused by the poison of the viper as one of the most dangerous, and from which it is impossible to recover. On the contrary, he thinks that of an hundred men, bit, each of them once, by a single viper, either in the foot or hand, parts usually exposed to the bite of this animal, not one of them would probably die, even although no remedy were employed.

To these researches, during which Mr Fontana had performed more than six thousand experiments, he subjoins an appendix; in which he particularly examines another remedy lately highly celebrated against the bite of the viper. While he was in London, a treatise was published in Italy on the efficacy of an alexipharmac against the poison of the viper, by the Abbé de Tecmeyer. In this treatise it is alleged, that calcined hartshorn is a certain remedy; and that applied under the form of cobras stones, as they have been called, it had performed miracles. Mr Fontana made a variety of experiments, not only with different pieces of hartshorn prepared in
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the manner directed, but also with one of these stones brought from Italy and prepared by the Abbé de Tecmeyer himself. But the result of these trials fully demonstrated the inefficacy of this so-much boasted mode of cure.

After these researches on the poison of the viper, the work before us next contains a dissertation on the American poison called Ticunas, and on some other vegetable poisons. When Mr Fontana arrived in London, the learned and ingenious Dr Heberden not only procured him a great number of American arrows, well preserved and well covered with the poison, but also obtained for him a considerable quantity of the poison itself. It was put into his hands inclosed and sealed in an earthen jar, the case of which still remained unopened : within the case there was a paper, on which was written the following words :
“ Indian poison brought from the banks of
“ the Amazons by Don Pedro Maldonada.”
There are two remarkable kinds of Indian poison, pretty nearly of the same activity ; the one called Lama, the other Ticunas. And the poison contained in this jar was of the

latter kind. He was not certain with which of these the poisoned arrows given him were prepared: But finding by experiment that it had nearly the same strength with the ticunas, he thought it needless to distinguish the one from the other.

With this poison Mr Fontana performed many experiments. Notwithstanding what had been advanced respecting the activity of the vapour arising from it, yet he found that the vapours arising even from the smoke of this poison are innocent, whether smelled or inhaled. This poison was, he found, readily and perfectly dissolved in water, even cold, and also in mineral and vegetable acids. It neither effervesced with acids nor alkalines, nor caused any kind of change on milk. It neither turned the juice of radishes red or green; nor did it, even by the aid of glasses, discover any thing regular or saline. From this he concluded that it is neither acid nor alkaline, nor composed of salts visible by the microscope. From a variety of experiments, he found that this poison has no more effect when applied to the eye than if that organ were bathed in water. He found, contrary to what happens with respect
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to the poison of the viper, that the American poison taken internally proves deleterious, but that a considerable quantity is required to kill even a small animal. By passing threads first impregnated with the poison, and then a little dried, through the skin of rabbits, guinea-pigs, and other animals, they died in a short time. And he even found death ensue, when the poison was applied to parts of the surface previously abraded, though not wounded. From other experiments, he found that the American poison, when applied to the skin slightly scratched, both in birds and quadrupeds, may be mortal, although this be not always the case.

From a series of experiments made with the view of determining the quantity of American poison necessary for killing an animal, he concludes, that about the hundredth part of a grain will kill a small animal; but that the poison must be dissolved, either to occasion death or any sensible disorder of the animal œconomy. Experiments made on the ears of animals, convinced him, that where there are but few blood-vessels, the poison either does not act or is not mortal. As well like-

wife as the poison of the viper, he found it to be entirely innocent when applied to tendons, ligaments, or cellular membranes deprived of blood-vessels: But the action of the poison when insinuated into the muscles was very sudden. He found in general, that the poisoned arrows are more deadly in their effects than the poison dissolved in water, and simply applied to the wounded part. When the poison is applied after being previously dissolved in the mineral acids, its effects seem to be destroyed; but rum and vinegar did not seem to diminish its influence; and even the mineral acids are both useless and dangerous when applied to the poisoned muscles of an animal. From the experiments which he made for determining the length of time requisite for the action of the ticunas, he found that this poison requires a more considerable time than is necessary for the venom of the viper; that its effects on animals are more vague and uncertain; but that the effects of both may be remedied by ligatures round the limb, or by amputating the part when done in time. The experiments which he made on frogs, eels, adders, and particularly on vipers,

pers, led him to conclude that the American poison, as well as the poison of the viper, is totally innocent to animals with cold blood. A solution of the ticunas mixed with blood drawn warm from an animal, prevented its coagulation; nor was the blood found coagulated in the large vessels of animals killed by it, in place of that almost general coagulation arising from the poison of the viper. But when introduced into the blood by injection into the jugular vein, it instantly produced death. From his experiments on the nerves, he lays it down as a certain fact, that the ticunas does not act on these, but acts entirely on the blood. From some experiments which Mr Fontana made with poisoned arrows from the East Indies, they seemed to differ only from the American poison in having less activity.

After having treated of the American poison, Mr Fontana next adds some observations on the *laurocerasus*, the laurel bay, the *Prunus Laurocerasus* of Linnæus. This, he observes, does not yield to the most active, producing violent convulsions and death. On distilling a great deal of water from a few of
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the leaves, he found it to be quite innocent. If indeed it be repeatedly distilled, even from the same leaves, it becomes more active, but does not induce death. But if, instead of adding water to the leaves, the distillation be made in *balneo mariæ*, the liquor that runs off is a very strong poison, and very sudden in its effects. This possesses such a degree of activity as to kill in a small dose in the same way with the *ticunas*. When it is either taken into the stomach or introduced into the body by injection, its action is so sudden that the animal instantly gives symptoms of pain, soon succeeded by convulsions and death. Two tea-spoonfuls of it taken internally, will kill a middle sized rabbit in a minute.

Two or three tea-spoonfuls of this water applied to a cut in the belly of a guinea-pig, produced convulsions in less than three minutes, and soon after the animal died. The *laurocerasus* water, however, Mr Fontana tells us, acts invariably with greater quickness and force, when taken internally even in smaller quantities. When swallowed, it not only suddenly kills animals of warm blood, but also those of cold blood. Taken in this way,

as it killed every animal on which Mr Fontana tried it, he doubts whether any of them be capable of resisting it; and if this be the case, he thinks it ought to be distinguished as the most terrible of all known poisons, from its universal faculty of destroying every species of animals.

Finding it thus an active poison when applied to the stomach, he determined to try its effects when immediately applied to the nerves, and when introduced into the blood without touching the parts that are cut. From its application to the sciatic nerves laid bare and wounded, it appeared, that in whatever way it be applied, whether immediately to the nerves, or even introduced into their medullary substance, it has no action on them either as a poison or otherwise. Contrary to what happens with the poison of the viper and the ticunas, the water of the laurocerasus when injected into the blood-vessels, produced no effect whatever.

The experiments demonstrating these facts were made by Mr Fontana in London, and an account of them was published in the philosophical transactions. But after his return
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to Florence in the year 1780, he instituted fresh inquiries on this subject. In distilling the leaves in glass retorts, without adding water, he obtained what has been called the spirit. This spirit was transparent, fragrant, and poignant to the taste ; and at the bottom of the receiver there was a quantity of heavy, coloured, odoriferous, oil. These he carefully separated ; and he tried different experiments both with the spirit and oil, not only of the first but also of the second and third distillations, as well as with the residuum or phlegm which remained, in the retort on the fluid being redistilled. These articles were tried by being swallowed, by being applied to tender parts, as the eye, the mouth, &c. and by being applied to recent wounds. From these experiments, it appears that the spirit of the laurocerasus is a very active poison, and that it produces this effect even when it is almost entirely deprived of its smell and pungent taste ; that its oil is also a poison, though less active than the spirit, since accidental circumstances and diversity in animals are sufficient to prevent its noxious effects ; but that it kills an animal with cold blood much quick-

er than one with warm blood. It appears also that this poison, when simply applied in very small quantity to the eyes, or to the inner part of the mouth, without touching the œsophagus, or being carried to the stomach, is capable of killing an animal in a few seconds; while again, although applied in much greater quantity to wounds, it has so little activity, that the weakest animals, such as pigeons, are capable of resisting its action.

Mr Fontana next relates some experiments made on the toxicodendron, or poison tree as it has commonly been called. This some celebrated writers have regarded as a very strong poison, while others have held a contrary opinion. He found that both the juice and milk of the leaves are quite innocent to different animals, both when applied externally, when taken internally, and even when applied to wounds; but that a very small portion of the milky juice applied to the human skin, produces remarkable symptoms even on very remote parts. Indeed our author soon abandoned his inquiries on this subject, having had the misfortune to poison himself three times successively with the leaves of it.

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He slightly touched the back of his hand with a leaf of the toxicodendron, which he had cut near the stalk. It was with difficulty he could afterwards perceive the skin to be wet at the place where he had applied it. But three days after there appeared a dark spot, and in three days more his whole face began to swell, particularly the eye-lids and tips of the ears. He felt a severe burning for fifteen days, and an intolerable itching for fifteen more; and his hands were covered in different places with small vesicles filled with a transparent sharp humour. He had no fever, but his pulse was very quick. Nearly the same symptoms occurred on two other occasions, when he merely touched the leaves with his fingers, and that too at parts where they had not been cut, and where there could be no suspicion of milky juice.

To the experiments on the toxicodendron are subjoined some made on the oil of tobacco. He made a small incision in a pigeon's leg, and applied to it the oil of tobacco. In two minutes it lost the use of its foot. He applied it to a wound in the pectoral muscles of another pigeon; in three minutes the ani-

mal could no longer support itself on its left foot. Two other pigeons, to the muscles of which he applied the oil of tobacco, vomited all they had eaten. He observed this vomiting to be the constant effect of the oil. But he considered the loss of motion in the lower part of the extremity to which it was applied to be merely accidental. And not one of the animals died in consequence of the application.

After some observations on the structure of the nerves, of the brain, tendons, muscles, &c. which, as being almost entirely descriptive, do not admit of abridgment, the work is concluded by an appendix, containing an account of additional experiments made on several of the poisons formerly treated of, particularly on the laurocerasus. From these experiments it appears, that the oil of this vegetable, when taken internally, is a poison to vipers and snakes; that it kills these animals when simply applied to their muscles; that it has the same effect on pigeons, both when applied to muscles and also when applied to the eye; that when applied to the heart, it soon renders that organ motionless; that
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when applied to the brain or nerves, it deprives these organs of the faculty of contracting muscles when stimulated ; that it deadens the part of a leech to which it is immediately applied ; that it kills rabbits and other animals when injected into the jugular vein : And, in contradiction to the experiments which he had before made in London, he found that the spirit of laurocerasus properly prepared by three distillations, when injected into the jugular vein of a rabbit, to the extent of about fifty drops, killed it almost instantly. Having opened the thorax, he found the lungs quite spotted ; the spots were very small, and resembled so many dots of a darkish red colour. The blood appeared to be viscous, and as having stagnated in the vessels ; and the blood in the heart was of a tenacious consistence and black colour. This experiment was repeated several times with nearly the same result. In one case, the animal died immediately on the injection of the liquid.

From these experiments Mr Fontana concludes, that there can be no doubt that the spirit of laurocerasus, when exhibited in sufficient

ficient doses, and rendered sufficiently active by redistillations, is a violent poison when introduced into the blood by the jugular vein. Hence he infers, that it cannot, as he once imagined, be considered as an exception to the law he had established of other poisons; which, when introduced immediately into the blood, without touching either the nerves or the wounded solids, kill in an immediate way, and in a few moments after bringing on convulsions. He thinks, therefore, that it is not only absurd to have recourse to the nerves for explaining the action of this poison, but that this imaginary hypothesis is entirely superfluous, since its effects upon the blood are thus manifest.

The last article of which Mr Fontana treats is opium. There are few substances with respect to the powers of which more opposite opinions have been entertained: And when we reflect that it is a substance daily employed by medical practitioners, it will readily be admitted, that the ascertaining truth is here truly interesting. Mr Fontana long imagined that many mistakes had arisen from exhibiting opium dissolved in spirit of wine;

the effects attributed to it, being in reality consequences of the ardent spirit. He therefore made many experiments, contrasting the effects of ardent spirit alone with those of opium dissolved in this fluid, and dissolved in pure water. From many experiments made on guinea-pigs and other animals, by giving it internally, by injecting it into the anus, by injecting it into the cavity of the abdomen, and by injecting it into the cellular membrane, he found that opium simply dissolved in water kills animals of warm blood; but that when dissolved in spirit of wine, its effects are much quicker and more violent. This, however, he concludes to proceed from the spirit itself; since this fluid, when exhibited alone, produces all those effects more violently and quickly than when the opium is dissolved in it.

He next tried several experiments on animals of cold blood, particularly leeches, turtles, and frogs. Leeches immersed in all these fluids died in a very short time. And he found, that when only one half of the leech, whether the head or tail half, was plunged into the fluid, that half alone died.

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From his experiments on turtles, he found that opium taken by the mouth, though dissolved merely in water, acts violently on these animals; but that its action is trifling when compared to that of ardent spirit. The action of the aqueous solution when injected into the rectum, though manifest, was also much less considerable than that of spirit of wine. And this was likewise found to be the case when these fluids were injected into the cellular membrane beneath the skin. From experiments made on the hearts of turtles, it appeared that a solution of opium in water has no immediate action on that organ, contrary to what had been supposed by almost every preceding observer. From his experiments on frogs, he could not affirm with certainty that the aqueous solution of opium taken by the mouth kills them in a short time; but they were killed by this fluid injected beneath the skin, although not so speedily as by spirit of wine. From immersing the hearts of frogs taken from the body into ardent spirits, spirituous solutions of opium, aqueous solutions, infusions of the Peruvian bark, and

pure water, in which experiments he employed upwards of fifty hearts, the consequences which he observed were diversified and very inconstant; but he saw no ground for concluding that opium has any real action on the hearts of these animals when applied in this manner.

He next relates a new set of experiments which were tried with the view of determining whether opium acts upon the nerves. And from its application to the brain itself, to the crural nerves laid bare, and to the crural nerves detached from the vertebræ, in the course of upwards of three hundred trials, he concludes with the most positive certainty, that the circulation of the blood in the machine is the vehicle for opium; and that without this circulation it could have no action on the living body; opium, when made to act upon the nerves alone, producing no more change than simple water, in whatever way it be applied to the nerve; whether the nerve be cut or entire; whether it be covered with its proper coats and sheaths; or whether the medullary pulp itself be put in contact
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with the poison. His next experiments were made by injecting an aqueous solution of opium into the blood-vessels of rabbits. From these he found that opium injected into the veins produces heaviness, convulsions, and at length death; that wine has nearly the same effects; that spirit of wine diluted with water produces heaviness and convulsions; and that if it be rectified it kills in an instant. He found the blood congealed in the cava, in the auricles, in the right ventricle, and in the lungs; which, he observes, are sure causes of death, without having recourse to the nerves.

It is, we apprehend, unnecessary for us to recommend to our readers, particularly those engaged in actual practice, a due degree of attention to the result of Mr Fontana's experiments on this subject. It has of late been but too fashionable for physicians to attribute every thing to the nerves, and to pay no regard whatever to the circulating fluids; and from the experiments above related, it would appear with but little truth. Our author, however, observes, that several skilful phy-

ficians have frankly acknowledged to him, that his experiments render the nature of nervous diseases in general very suspicious. And it is certainly much to be regretted, that of late this term has often been employed, not merely as a cloak for ignorance, but as a bar to future inquiry.

III.

Observationes Medicinales de Febris Intermittentibus, et qua ratione eisdem medendum est. Opus quod Scientiarum Artium atque Literarum Societas Divionensis præmio coronavit. Auctore Carolo Strack, M. D. et in Universitate Moguntina Præseos Medicæ et Collegii Clinici Prof. Or. &c. 8vo, Offenbach.

THOUGH few affections more frequently present themselves to medical practitioners than fevers of the intermittent kind, yet there can be no doubt that practitioners are still much in the dark with regard to many particulars respecting them. With the view of obtaining a farther illustration of the nature of these fevers, and a certain knowledge of those marks pointing out the particular stadia of these fevers during which medicines may be exhibited with greatest advantage and with perfect safety to the pa-

tient, the academy of Dijon proposed an inquiry respecting them as the subject of a prize-dissertation. That prize was adjudged to a treatise written by Dr Strack professor at Mentz. As we have not had an opportunity of obtaining the original, we shall here present our readers with an analysis of it, extracted from the *Leipfic Commentaries*.

This treatise is divided into three books. In the first of these, the author treats of the nature of intermittent fevers; in the second, of the method of cure; and, in the third, of the different uncommon forms which they put on.

The author considers a peculiar miasma as the only cause of all intermittent fevers. These are distinguished by different accessions, according to the condition of the body which is attacked. Thus, with one depraved state of the habit, a quotidian, with another a tertian, and, with a third, a quartan is produced. He is led to adopt this opinion, from observing that the same intermittent fever, during its course with a patient, will assume different types; that all intermittents very much resemble each other, both with respect to the
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symptoms of the paroxysm and the method of cure ; that they all leave the same sequelæ, such as jaundice, tumours of the spleen, and dropy. From these, and some similar particulars, he concludes, that intermittent fever in general depends on its own peculiar miasma ; that although simple and uniform, the fever induced by it admits of different types, in the same manner as the fever induced by the miasma of the small-pox.

He supposes intermittent fever to take place when this peculiar miasma acts upon a body which, by its previous diseased state, is fitted to receive and to cherish this miasma. Thus the intermittent fever may be considered as formed from a depraved state of the habit, and from an acute miasma. Hence it may, he observes, be overcome, either by removing that morbid condition which predisposes to the disease, or by expelling the miasma itself ; which may often be accomplished by purging the body from that impure colluvies in which it is at first seated.

He next makes some observations on the marks distinguishing intermittent fevers, and on the explication of their different stadia.

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He considers the cold as arising from the febrile miasmata received from some fomes, and united to it, stimulating the heart ; in consequence of this, the whole vessels of the body, being contracted as it were by a convulsion, are straitned and become stiff. Hence there arises impeded circulation, diminished attrition, and extinction of heat. From this he thinks it is, that old men dying of intermittent fevers are always cut off by the cold stage, never during the hot fit ; but the matter driven through the vessels is by degrees attenuated ; and if it be rendered milder, an opportunity is given to the vessels of reacting, and thus propelling the humours. Hence there arises augmented attrition, removing the cold and inducing the hot fit. This critical perturbation, during which the patient is uncommonly agitated, induces the sweating and the discharge of red coloured urine, depositing a copious sediment ; which, in conjunction with the sweat, constitutes a proper crisis. How far any of our readers will be disposed to adopt this theory of intermittents, we cannot pretend to say. Without stating those particulars which appear to us
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to be objections to it, we may only observe, that modern theories on this subject differ as much from each other as they do from those of more ancient date; and it is perhaps to be doubted, whether any theory has yet been proposed which can be considered as even near the truth. But fortunately these speculations little affect either successful practice, or even accurate observation respecting the prognosis. And to the last of these subjects our author next proceeds.

It has long been the opinion of physicians, that a favourable crisis happens on the uneven days, and a bad one on the even ones. This opinion others have rejected as groundless. But our author, from his own observation, is inclined to adopt it: nor has he, during the course of twenty-four years practice, observed a single intermittent terminating spontaneously after the second, fourth, and sixth accessions, although he has frequently seen such terminations after the uneven ones. The crisis of intermittent fevers, as well as of other diseases, were, he adds, much more readily observed by the ancients than by the moderns; because the former were unacquainted with
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those powerful remedies by which diseases can now be terminated without any such crisis.

The crisis of the febrile matter is, he tells us, that effort by which, when moved, attenuated, and concocted, it is expelled by sweat towards the conclusion of the accession. The sweat then occurring is copious, general, viscid, and adhering long to the surface. It has the smell of fermenting bread, and gives a tinge to the linens. The peculiar fœtor, he says, is a proof that this sweat contains a large proportion of the fomes: But when perfect, it must be universal, and at the same time give alleviation of the disease. A crisis sometimes happens by ulcers of the mouth, nose, and tongue: But that, he observes, is in general imperfect, not expelling the whole morbid matter, and easily permitting a recurrence of the disease. Intermittents, he observes, are not terminated either by vomiting or looseness, unless the whole febrile matter happens to be lodged in the intestinal tube.

The method of cure in intermittent fevers is, according to Dr Strack, on one of two plans; either rational or empirical. With regard to the first, every intermittent accession

sion may, he thinks, be considered as a continued fever, very short in its course: hence the proper cure is perhaps to be conducted in the same manner; but that cure alone will often be unsuccessful. He also considers as doubtful that plan of cure which consists in exciting a sweat a short time before the accession, though much recommended by the ancients, and still daily practised among the vulgar. He holds it therefore preferable to have recourse to the Peruvian bark; by means of which a speedy and safe cure may be obtained. During the cold fit, he advises that warm aromatic drinks be given to induce sweat: but as soon as the hot fit begins, he recommends cold water a little acidulated. On the commencement, however, of the sweating, he advises the having again recourse to warm drink, as a means of supporting the sweat and of supplying the loss sustained.

When the patient is free from the fit, he thinks that much prejudice is often done by means of purgative medicines; and he affirms, that there is nothing by which the body labouring under intermittents is more apt to be hurt than by purgatives. It must first,
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he says, be determined whether the matter be crude or concocted ; because, unless regard is paid to this, the bowels are only harassed by means of purgatives, and the disease rendered so obstinate as to resist the Peruvian bark. But regard is chiefly to be paid that a purgative be not exhibited on those days on which a crisis chiefly happens, or in which nature makes an effort towards it ; for then, he asserts, it is not only adverse to the disease, but often even productive of fatal consequences. But as he holds purging to a great degree to exasperate the fever, so, on the other hand, when the matter is concocted, it is prejudicial not to evacuate the belly sufficiently : for without this, a large quantity of the Peruvian bark will not be sufficient to overcome the fever. Dr Strack rarely employs a purgative till after the third accession ; and he even reckons it safer to purge only after the fever is terminated.

The cure of intermittents is not, he alleges, to be attempted till after coction has taken place. The vernal intermittents easily admit of coction ; but this, he thinks, is not the case with autumnal ones, from the fluids be-
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ing rendered acrid by the heat, are thus unfit for concoction. Vernal intermittents, when they attack young people, when they are not conjoined with any chronic disease, and in which, after each of the three first accessions, there takes place a profuse sweat smelling strongly of acid, with morbid urine, easily admit of cure. But the contrary happens in the intermittents of old people, when the urine, in the days free from accession, is of a light, red, and transparent appearance. When the fever is brought to a state of coction, it is, he alleges, easily cured by almost any bitter. He has often completely removed such fevers by the powder of the bark of Simarouba, taken to the extent of ten grains thrice a-day. But he considers the Peruvian bark as justly intitled to a superiority; and he directs it to be given to the extent of a scruple every hour: for he thinks it best to exhibit it in small doses, which can be conveniently retained and digested in the stomach, and exert their full effect.

He contends, that the Peruvian bark, employed under the form either of vinous or watery infusion, will be of no avail; and he

considers all those evils which some practitioners have alleged to arise from the cure of intermittents by the Peruvian bark, as being entirely groundless. He thinks that the frequent relapses of intermittents, after their removal by the bark, proceeds from the medicine being laid aside as soon as a single accession is missed. He recommends, therefore, that although there should be a cessation of fever, the use of the bark be continued for some time, that the whole remains of the disease inherent in the body may be expelled. On this he considers the cure of the disease as hinging. He forbids purgative medicines from being either mixed with the bark or given after its employment: for by these he alleges that intermittents, when present, are exasperated; or, when they have ceased, are renewed. He advises that the bark should be given pure as soon as it is known that signs of concoction have taken place.

It is common, he observes, for relapses in intermittent fevers to happen on those days on which the paroxysm would have occurred, if no suspension had taken place, when relapses happen soon after a cure. But our

author has observed this to happen at the end even of a considerable time. Such relapses always indicate that the fever has been imperfectly removed. But it is impossible to determine by weight how much bark is necessary for the complete removal of an intermittent. When pregnant women are attacked with intermittents, recourse should be had without delay to the most effectual remedies, that the disease may not be communicated to the foetus. With them, he recommends that a large quantity of bark should be given, and continued for some time after the fever seems to be completely removed.

In the second book, Dr Strack treats of intermittent fevers which are uncertain in their appearance, and which lurk under the resemblance of some other disease; which seize the head, either affecting the whole with considerable pain, or more especially occupying some particular part. These are chiefly distinguished by the recurrence of the pain observing stated periods. But when regular accessions do not take place, they are chiefly distinguished from their being terminated by sweating, and by the appearance of the urine.

He mentions an epidemic intermittent prevailing in the years 1749 and 1750, which appeared under the form of sleepiness. The cure entirely turned on the liberal use of the bark between the accessions. He mentions also an acute inflammation of the eyes, partaking of the nature of an intermittent fever, cured by the Peruvian bark. And he observed an intermittent combined with pleuritis ; which, though difficultly distinguished, yet yielded to the bark alone. It began with cold, and an acute pain of the side, succeeded by burning heat, nausea, and thirst. This was followed by a parched tongue, difficult breathing, watchfulness, and delirium ; and with these symptoms sweating occurred. On the second or third day, there took place looseness, agitation of the body, and a copious sputum tinged with blood. He points out the following circumstances as distinguishing that pleuritis which partakes of the nature of an intermittent, and is removed by the bark ; a longer continued shivering, and greater degree of cold, than are common at the commencement of other pleurifies ; a greater degree of succeeding heat ; copious vomiting ;

a bitter taste in the mouth ; profuse spontaneous sweats; of a disagreeable subacid smell ; high coloured urine, becoming turbid when cold, and depositing a lateritious sediment. With these circumstances it is not relieved by any of the common remedies of pleuritis, but yields to the Peruvian bark.

In like manner, an intermittent fever may be concealed under the form of colic, cholera, arthritis, hysteria, or even convulsions. He observes, that boys, and plethoric young men, are chiefly liable to convulsions when attacked with intermittent fevers ; and from which they are again freed when the heat begins to subside. These are much less alarming than the convulsions which happen at stated periods without any suspicion of intermittent.

The last diseases of which Dr Strack treats, are those which succeed intermittent fevers. These either seize particular parts or affect the whole system. He alleges that boys are more liable to tumour and hardness of the belly from intermittents than adults ; and he considers this affection as depending chiefly on enlargement of the spleen, which he has sometimes found to occupy a very large space

in the abdomen. This tumour, when large and obstinate, is, he thinks, by no means free from danger. When it admits of cure, this, he thinks, is to be effected by the Peruvian bark ; because its origin and increase depends on the intermittent fever. And while neither internal aperients, nor ointments applied externally, are of any avail, by the use of the bark it will, he affirms, be completely resolved, if it be not of long standing. And he even alleges, that by long continuance of the bark, he has known very large tumours of the spleen totally dissolved.

If the miasma be thrown upon the liver, and lodged there, it produces a conjunction of fever and jaundice. This, however, he tells us is to be cured in the same manner as an intermittent alone. Dropsy succeeding intermittents is chiefly distressing, he observes, to infants and to paupers. But he thinks it very erroneous to attribute, as some are disposed to do, these dropsies to the Peruvian bark. For he observes, that when recourse is immediately had to the bark, it either prevents the dropsy or removes what has already taken place. And he mentions many ex-
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amples of dropfies fucceeding intermittents being cured by the Peruvian bark alone.

If the menftrual flux be deficient during the courfe of an intermittent fever, he recommends the Peruvian bark as a means of terminating the fever, and thus reftoring the difcharge. And when again, after the fever is terminated, the difcharge is wanting, he confiders the Peruvian bark as the beft reftorative, from expelling the remains of the fever : in the fame manner, he alleges, that it renews the hæmorrhoidal flux, when its courfe is interrupted by a fever.

When nurfes are attacked with intermittents, their milk either fails, or in place of milk there is a fecretion of a thin ferum. This inconvenience is beft obviated by medicines expelling the fever, particularly by the bark ; but cannot, he tells us, be counteracted by other means. Exceffive excretions happening from intermittent fevers, whether under the form of copious fweats, exceffive loofenefs, a profufe menftrual or lochial difcharge, or any other form, are, he affirms, fuccefffully alleviated by means of the bark ; which,

when properly exhibited, restores the body to a vigorous and plump state.

He concludes this treatise with considering the question, at what period it is proper to cut short an intermittent? In those subjected to different diseases, since the continuance of an intermittent fever is sometimes advantageous, sometimes pernicious, no certain rule can be given; particularly if, from the fever, there be any hopes of the removal of obstinate diseases before existing. But when no advantage is to be expected from it, or when other supervening diseases appear, he advises that the intermittent should be immediately terminated by the Peruvian bark.

Although the treatment of intermittents here recommended by Dr Strack may be considered as agreeing very much with that at present commonly adopted in Britain, yet the analysis we have given of his treatise, which was crowned with the approbation of a learned society, will serve to shew how far those agreeing in practice still differ with respect to their theoretical opinions in medicine.

IV.

Die Eispflanze als ein fast specifisches Mittel empfohlen, von Dr Johann Wilkelm Friedrich Lieb. 8vo, Hofrath. i. e. The Ice Plant recommended as a specific Medicine.

IN this treatise, of which also we shall here present our readers with a short account, extracted from the Leipzig Commentaries, the ice plant, or diamond ficoides, the *mesembryanthemum crystallinum* of Linnæus ; an article which, as far as we know, has not hitherto been recommended by any medical writer, is highly extolled as a medicine of peculiar efficacy. Dr Leib, the author of this essay, affirms, that he has never employed it without the most immediate success, and that it put an instant period to some very distressing complaints.

He considers it as acting chiefly upon the bile, and upon all diseases of the bladder and

urinary passages. He employed it against collections of water in the abdomen, against retentions of urine or difficulty in the discharge, against spasms of the bladder, and against convulsive coughs, with the greatest success. It proves, he tells us, a very powerful diuretic ; and the urine discharged after this plant is exhibited even in small doses, deposits a considerable sediment. When given in larger doses, he affirms, that it acts more powerfully in augmenting the discharge of urine than squills, or any other of the diuretics hitherto esteemed the most active. But he considers it as chiefly useful against bilious affections occurring in the summer ; particularly those which depend on thick, viscid, black, inert bile, wandering in the body, or translated to different parts, and not duly secreted. The form under which he recommends it, is that of the expressed juice of the plant.

V.

Dissertatio inauguralis Medica sistens Observationes Practicas circa usum Belladonnæ in Melancholia, Mania, et Epilepsia, quam pro gradu Doctoris, publice defendit Joannes Henricus Munch, Cellensis. 4to, Göttingæ.

THE deadly night shade, or *atropa belladonna* of Linnæus, though long considered as one of the most deliterious of the vegetable poisons, has also been not unfrequently employed for medical use. But most of the observations which have hitherto been published respecting it, give little certainty with regard to its effects. In this dissertation, however, of which we here extract an account from the Leipzig Commentaries, the author has collected a considerable number of cases treated by himself and his father, in which it has been employed with singular success, and that

that too in diseases of the most obstinate kind. Dr Munch, however, does not presume to recommend it as an infallible specific in those complaints. He recommends it only from facts, as a medicine in which there resides very active powers, in combating some affections, with regard to the causes of which we are still totally in the dark. And that this work might not exceed the usual bounds of inaugural dissertations, he confines himself to the detail of those cases in which it was employed with success.

He affirms, that the belladonna possess very remarkable powers as a discutient and resolvent. And he bears testimony to several cases of very large scirrhotities, which his father had successfully removed by its use. Dr Munch himself, by the employment of this medicine, was freed from a submaxillary tumour, which had succeeded the measles, and which had obstinately resisted the use of cicuta and other active medicines. It has also, he tells us, a wonderful effect in removing obstructions in the internal viscera; and he adds, that the celebrated Professor Murray of Gottingen had in a short time removed by its

use several instances of very obstinate jaundice.

Besides a narcotic power, this vegetable, he tells us, possess remarkable influence in promoting all the excretions, particularly those by sweat, urine, stool, and saliva. It has also, he observes, such influence on the menstrual discharge, that some are disposed to think it exerts a peculiar effect on the uterus. He represents it also as given with singular success in those diseases arising from the morbid matter of retrocedent exanthemata. It is, he thinks, from its resolvent power that it is useful in those instances of melancholia, mania, and epilepsy, which arise from obstructions of the internal viscera, especially if these obstructions have derived their origin from spasms. And it is again, he thinks, from its narcotic power quieting the nervous system, that it is useful in those diseases, when arising from what may be called immaterial causes suddenly disturbing the sensorium. In these cases, he considers it as restoring tranquillity of mind in the same manner as opium does. In consequence of that power which it possesses of mitigating pain, he considers it

as useful in every epilepsy arising from excessive pain, and in all those alienations of mind where the patient's delirium is entirely respecting one subject. In all those cases where these affections arise from retrograde morbid matter, or from any intercepted excretion, he considers it as useful from its expellent power. And finally, he considers it as a medicine which ought always to be given in desperate diseases, after these have been found to resist other modes of cure, and when the morbid cause cannot be detected.

With respect to the form in which this medicine ought to be given, he considers the powder of the plant, or of the root, to be preferable to the extract ; because, by the action of fire in forming the latter, a large portion of the volatile and more active parts is carried away. With respect to its exhibition, he recommends its being employed at once in a sufficiently large dose ; for if it be exhibited in very small doses, the body, he tells us, soon becomes habituated to it, and its effects are lost. And it was, he thinks, from this reason, that it failed so often with Dr Greding ;

Greding; who gave it not only in very small doses, but under the form of extract.

A considerable part of this essay is occupied in relating those cases communicated to our author by his father, in which the belladonna was employed with success. Among others, it alleviated and removed one case of melancholly arising from an excessive menstrual discharge; a second proceeding from hereditary disposition; and a third in a woman in her forty-eight year, probably arising from the cessation of the menstrual discharge. It removed several also arising from interrupted evacuations, or from causes that were not obvious. It removed a case of mania, following excessive grief from disappointed love; and likewise several other instances of that affection, in which the cause was latent.

It removed epilepsy in a girl, with whom that disease had been induced by severe lashing in school, and after it had continued for six years. Another epilepsy arising from obstructed menstruation was cured by it, upon the discharge being restored. The same medicine was also found effectual in removing cases of epilepsy arising from anger, from fear,
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and in combating some taking place as a consequence of measles, of small pox, of repulsion of tinea capitis, and of worms. And in conjunction with evacuant medicines, it happily restored to health a boy who had been epileptic for many years, in consequence of obstructions of the internal viscera.

These facts may be considered as strong inducements to a trial of this remedy in the diseases which have been mentioned, especially when these have obstinately resisted other modes of cure, and the disease has the appearance of being desperate. It is, however, but proper to mention, that in some cases in which the belladonna has been employed at this place, even in small doses, it has given rise to a temporary mania with those who were not before in any degree subjected to that affection. A circumstance which we need hardly add should lead every practitioner to administer it with due caution, and to employ it only where the urgency and obstinacy of the case render it necessary.

VI.

An Account of the Effects of Swinging employed as a Remedy in the Pulmonary Consumption and Hætic Fever, with an introductory Letter to Sir Joseph Banks, Bart. President of the Royal Society. By James Carmichael Smyth, M. D. F. R. S. Physician Extraordinary to his Majesty. 8vo, London.

DR SMYTH had long entertained an opinion, that persons afflicted with pulmonary complaints would derive considerable advantage from the motion of swinging. He was therefore desirous of bringing it to the test of experiment. With that intention, he made application to the governors of the Middlesex hospital, who ordered a swing to be put up in the garden belonging to that charity. The success which attended the trials he made with a considerable number of patients, not only justified the idea he had formed,

formed, but even exceeded his expectations. With the laudable purpose, therefore, of extending the benefit of this practice, he has here communicated to the public the result of his observations.

The advantage of sailing in the cure of consumptions has now been known for many centuries. It is recommended by the physicians both of ancient Greece and Rome. But although the benefit of sailing in this disease is now generally admitted, physicians still entertain very different sentiments respecting the particular circumstance or combination of circumstances from which this benefit is derived. The salubrity of the sea-air, the change of air, the vapour of the rosin and tar of the ship, the peculiarity of the exercise, the sickness and vomiting induced, have each been supposed the sole origin of the advantage derived from sailing. As these opinions have had considerable influence on the practice of medicine, Dr Smyth thinks it may not be improper to examine them.

Dr Gilchrist, who has written professedly on the subject of sea-voyages, adopts the first of these opinions, and recommends it to those

who, from weakness or timidity, dare not undertake a sea-voyage, to repair to the sea-shore, and by riding or walking on the beach, to inhale as much as possible of the saline effluvia. Dr Ruffel, believing every phthisis to be scrophulous, is equally warm in his praises of sea-water and sea-air for the cure of it. But notwithstanding these authorities, Dr Smyth's observations from actual practice led him to adopt a very contrary opinion. After residing for nine summers on the sea-coast, with many opportunities of judging of this subject, he has no hesitation in asserting, that the sea-air is constantly prejudicial to hectic and consumptive patients, and even to those who have a tendency to such complaints.

His opinion in this respect is not, he observes, singular. And he mentions the names of Dr Knox, who practised for many years at Scarborough, and of Sir Lucas Pepys, who practised at Brighthelmstone, as having also observed the air on the sea-coast to be hurtful to the consumptive. As a farther proof of the justice of these observations, he adds, on the testimony of Dr Ciciri, a physician of Milan, that the opinion is so general among

the Italian physicians, that they constantly remove consumptive patients from the sea-coast to the interior parts of the country. The same opinion, he tells us, also prevails among the physicians in the southern parts of France. And from the testimony of others, as well as from his own observation, he asserts, that Montpellier, formerly resorted to from all parts of Europe, is one of the most improper places for the consumptive that can possibly be chosen. The island of Madeira, notwithstanding its temperate latitude, and very great equality of climate, he also considers as very unfavourable to those whose lungs are materially injured. He concludes, therefore, that the recommendations of sea-air have rather been the offspring of theory and fashion than of any accurate reasoning, and have chiefly arisen from confounding the effect of sailing with that of sea-air; two things in their nature almost totally distinct, and even to a certain degree opposite.

In proof of this assertion, he relates the case of a young lady who was sent to Margate with symptoms of a pulmonary phthisis. She was directed when the weather was favourable

vourable to sail for some hours every morning. The immediate benefit she received from it was truly surprising : for frequently after she had passed a very restless night, and when weak and low from the colliquative morning sweating, the boat had scarcely got out of the harbour before her strength and spirits revived. Her cough, at other times constant and troublesome, entirely left her, and she remained free from it while she continued on board : But no sooner was she on shore, than this, as well as all the other symptoms, again returned ; although she might be considered as equally breathing the sea-air at all times, and although the sailing never occasioned sickness or vomiting.

With respect to change of air, Dr Smyth contends that this may be obtained with much greater certainty on shore than at sea ; and that therefore the benefit of sea-voyages cannot result from it. On shore, he observes, the air admits of great variety, according to height, exposition, soil, &c. while he contends, that the only difference which can possibly take place at sea is a difference in temperature. But it ought, we think, to be re-

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membered, that most, if not all the circumstances mentioned as varying the air on shore, are causes contaminating it. And it is very much to be doubted, whether there be any situation on shore where a patient can breathe as pure dephlogisticated air as at sea, especially when at a distance from any land.

With respect to the effluvia from the vapour of tar and rosin, experience, he observes, has now taught us, that these and all other fumigations are but of trifling benefit, and frequently do more harm by exciting cough than they can do good by relieving the breathing. And he considers the idea that this complaint is to be cured by the healing of ulcerations in the lungs, as founded on false pathology and ignorance of the true nature of the disease.

Some have referred the benefit of sea-voyages to exercise; but they have not attended to the distinction between motion and exercise. For if by exercise we mean that agitation of the body produced chiefly, if not entirely, by its own powers, those subjected to pulmonary affections have much less opportunity for it at sea than on shore.

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If the advantages derived from sailing were owing, as has been the opinion of many, to the sickness and vomiting which it occasions, the benefit obtained from it ought always to be in proportion to its effects in producing these. This, however, Dr Smyth asserts, is by no means the case. In most instances, where he has seen any singular advantage from sailing, the sick were either not at all, or but slightly, affected by nausea and vomiting; while, on the other hand, he has known patients suffer violently from both during the whole time of their being at sea, without the least abatement of the cough or hectic symptoms.

Having thus endeavoured to show, that the true cause from whence the advantage of sailing in consumptive cases is derived has hitherto escaped the notice of physicians and philosophers, Dr Smyth next proceeds to state his own sentiments. Here he reckons it first necessary to establish the distinction formerly alluded to between exercise and motion; a distinction which he observes has not hitherto been made by any person whatever. By exercise, he understands muscular action,

or the exertion of the loco-motive powers of the body, either alone or combined. And he represents this as increasing the force and frequency of the heart's contraction, the velocity and momentum of the blood, the quickness of the breathing, the heat, the irritability, and the transpiration of the whole body. It gives also, he observes, a temporary increase of strength and vigour; and when continued beyond a certain time, induces lassitude, debility, and languor. But when regulated according to the strength, it promotes digestion, gives tone and vigour not only to the stomach but to the whole system; and is therefore of service where the action of the stomach is impaired, or in cases of general weakness. To pulmonics, he adds, it occasions a sense of oppression at the chest, with a shortness of breathing, cough, and palpitation of the heart; and therefore proves hurtful, or is of doubtful efficacy, where the lungs are obstructed, inflamed, or irritable, and where the circulation is already too rapid.

Having given this account of the effects of exercise, he next proceeds to state those of motion; by which, in contradistinction to exercise,

ercise, he means that motion not necessarily accompanied with any agitation or succussion of the body, and which is totally independent of any muscular exertion. The two most obvious examples of this are sailing and swinging; to which he thinks that a third may possibly be added, aërostation. But as the last has not hitherto, and probably never will be used for medical purposes, he confines his observations to the two former. Most of those unaccustomed to sailing are at first affected with giddiness, sickness, and vomiting, which in general are severe in proportion to the delicacy and irritability of the individual; though infants are an exception to the rule. Motion, he observes, affects the lungs, as appeared from its influence in the case already quoted, in immediately suspending the action of coughing. The heart also feels its influence, as is evident from the frequency of the pulse being sometimes lessened by it. And as a strong evidence that these effects are merely the consequence of the motion, he observes, that they are produced not only by sailing, but also by swinging; the motion of which is ex-

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tremely similar to that of sailing, though resembling it in no other particular.

Dr Smyth, in our opinion, has here pointed out with no less judgment than accuracy, the difference in the effects resulting from motion and exercise ; and there cannot, we think, remain a doubt, that the distinction between these two, as applied to the purposes of medicine, has a foundation in nature. But this distinction is not, perhaps, so new as Dr Smyth seems to imagine. For though different terms have been employed, yet nearly the same idea has been conveyed by those who have divided exercise into the active and passive kind ; and it is, we think, not without some advantage that they have pointed out an intermediate kind, which, as in some degree combining the effects of both, has been styled the activo-passive.

After thus stating the effects of motion, and the grounds on which benefit may be expected from it in consumptive cases, he next proceeds to relate facts and observations from actual practice, by which this benefit is confirmed. And he here presents us with the detail of fourteen cases in which he employed
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it with patients admitted into the Middlesex hospital. The first case is that of a man in his 45th year, affected with frequent cough, copious purulent expectoration, and acute hectic fever. He began to use the swing on the 16th of June; and after swinging for ten minutes his pulse was observed to fall from 124 strokes in the minute to 119. Its continuance on succeeding days had a similar effect, while his feverish exacerbations became less violent, and his other symptoms diminished. By the 26th of July he was so free from complaints that he was dismissed from the hospital; and he continued at the end of a considerable time afterwards in perfect health.

The second case was that of a man who had for some years been subject to a cough, at times spitting up blood in considerable quantity. When he applied for assistance at the Middlesex hospital, he was affected with regular evening exacerbations of fever, and colliquative sweats during the night, and his pulse was 130 in the minute. From the use of the swing, the frequency of his pulse was gradually diminished, and he recovered his usual health in the course of some weeks. In
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the third case it was equally successful ; and the apothecary, who paid particular attention to this patient, remarked that he never coughed while in the swing ; and the man himself declared that he constantly felt cooler, breathed easier, and expectorated more freely, immediately afterwards.

In ten other cases here related, all of which were attended with symptoms giving at least strong presumption of phthisis, under the use of the swing, continued from ten minutes to half an hour at a time, the symptoms of the patients gradually left them, and they were dismissed from the hospital in good health. But in the last case, that of a lad about fifteen years of age, who applied at the hospital with symptoms of confirmed and rapid phthisis, it was not attended with the same success. Neither the daily use of the swing, nor various other medicines which were prescribed, had any influence in checking the progress of his disorder, which soon terminated fatally. But even in this case, Dr Smyth tells us, that though the swinging did not lessen the frequency of his pulse, it relieved his breathing, and

and he was free from the cough during the time of it.

After having given a detail of these cases, Dr Smyth concludes this treatise by drawing from them a few conclusions respecting the power of motion on the body. He concludes, that the motion of swinging has often a very sensible and immediate operation on the heart and lungs, as it reduces the frequency of the pulse, lessens febrile heat, suspends or prevents coughing, and promotes expectoration. He concludes, that sailing, an analogous motion, will have the same operation on the heart and organs of respiration, and that this affords a complete explanation of the advantage arising from sea-voyages in the cure of pulmonary complaints and hectic fever. He concludes, that the effects of motion are not only different, but in many respects opposite, to those of exercise. While exercise increases the heat of the body and frequency of the pulse, excites cough, and occasions sweating, languor, and fatigue, motion lessens the heat and the frequency of the pulse, prevents and removes coughing, and invigorates even the most weakly. In short, while exercise acts

as a stimulus, motion operates as a sedative on the system. And this sedative power of motion, Dr Smyth is convinced will be found not only useful in the cure of pulmonary complaints, but may be employed with advantage in a variety of other cases.

While motion for its employment in the practice of medicine may be obtained either from sailing or swinging, which produce in many respects similar effects, yet there are, he observes, some circumstances in which they differ. Sailing he considers as having the superiority over swinging, in the motion being continued both night and day, and as being frequently united with a change of climate, often in other respects salutary. On the other hand, swinging is a remedy within the reach of every one ; it is neither attended with the risk nor inconvenience of sea-voyages ; it may be employed at any period of the disease, or in any degree of weakness ; and although the open air is to be preferred, yet it may even be used in a bed-chamber.

We cannot conclude our account of this treatise without expressing an earnest wish, that the success which has attended the trials
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made by Dr Smyth may be confirmed by the experience of others. If that experience shall establish its efficacy in the cure of phthisis, there is perhaps no medical discovery of the present age which can be compared with it in point of importance. We are, however, sorry to add, that, from our own experience, we cannot say much in favour of it. Since the publication of Dr Smyth's treatise, we have had recourse to it in a considerable number of cases. In some few, where there were symptoms giving a presumption of phthisis, benefit seemed to arise from it; in others, though employed at a period when the symptoms were very slight, yet it had no influence either in checking the progress of this insidious disease, or in preventing its fatal conclusion. And indeed we have not met with any one case where phthisis had decidedly taken place, in which any material benefit arose from its employment. With some patients, the sickness it occasioned was so distressing that they could not be prevailed upon to give it a proper trial; while with others it produced no obvious effect whatever, and particularly no change on the state of the

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pulse. We are, however, far from considering the trials we have made as any argument to deter others from directing its employment. And whatever the ultimate decision of experience may be with respect to this practice, we must still think the author of this treatise justly intitled to that praise which the public ought ever to bestow on industry and ingenuity.

VII.

Josephi Quarin *Sacræ Cæs. Reg. Apost. Maj. Concil Aulic et Archiat in Nosocom. General. Vindobon. Directoris Supremi, Animadversiones Practicæ in diversos Morbos.* 8vo, Vinnæ.

THE author of this treatise, who has arrived at the head of his profession in a large city, here presents us with the fruits of his observations during a practice of thirty years, and after having had the opportunity of having under his immediate direction one of the most extensive and best regulated hospitals in the world. Without aiming at any general arrangement, he here treats of sixteen different diseases, bestowing a particular chapter upon each. It is not our intention to give a full analysis of all he has said, particularly with regard to the history and theory of particular diseases. We shall chiefly aim at point-

pointing out the practices he advises which differ from those commonly employed in this country.

The first disease of which he treats is apoplexy. After mentioning the common division of this disease into the sanguine and ferrous, which last, however, he represents as a very rare affection, he recommends, as a first remedy in the former species, blood-letting in the different ways in which it has usually been advised. He advises sinapisms to the feet ; but dissuades from the use of blisters, unless after copious bleeding. Although an enemy to drastic purgatives, yet he advises a gentle one ; and for this purpose he recommends a mixture containing a drachm of nitre and two ounces of the rob of elder diffused in ten ounces of water. After several loose stools have been obtained by means of it, he recommends that eight or ten grains of the extract of arnica should be added to it.

He points out the danger of emetics even in those cases where repletion of the stomach has preceded the attack ; and observes, that those fall into an egregious error who prescribe emetics on account of bilious vomiting,

as this frequently arises from plethora giving oppression to the brain. To those of a cold and languid temperament he recommends the following powder: \mathfrak{R} Colocynth. gr. i. fatch. unc. sem. divid. in dof. viii. sumat æger tertia aut quarta quavis hora ejusmodi pulverem. To patients of this constitution he observes that issues and setons are also of use.

In the second chapter he treats of epilepsy. As the fit seldom proves fatal, he thinks it sufficient during its course to attend to the position of the body and the prevention of injuries. He condemns the application of acrid substances to the nose, lest sneezing should be induced, which may endanger a rupture of the vessels within the brain. And he affirms, that he has seen opium, during a fit, not only be productive of no relief, but give rise to apoplexy. Among other remedies to be used during intervals between fits, he recommends phosphorus, in doses from one to three grains, taken three or four times a-day in any liquid, or in a little conserve; in those cases where the impetus of circulation is to be increased. With some epileptic patients of a pale and swoln appearance, he

tells us that he has obtained a complete cure by the use of inspissated ox-bile continued for several weeks. But of all the remedies that have been employed against epilepsy, he looks upon the root of the wild valerian as upon the whole the best. He directs it to be given from two to five drachms in the course of the day under the form of powder; and he advises that the root should be gathered before the leaves come out: And when the recurrence of paroxysms happens at certain periods, he advises that it should be conjoined with the Peruvian bark.

The next subject of which he treats is cough; a disease proceeding from so many different causes as to require a great variety in the cure. In the convulsive cough, he recommends the following powder as having often proved highly serviceable:

℞ Flor. sulph. drachmam unam.

Gum. Arab.

—— Tragacanth. utriusque sesquidrachmam.

Extract. Glycyrr.

Sachar. utriusque drach. duas.

Kermes min. gr. ii.—iv. f. pulv.

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He advises half a drachm or a scruple of this powder to be taken every third or fourth hour, a draught of the infusion of fennel-root and the flowers of the verbascum being taken after it. He recommends also nearly a similar powder of kermes mineral with the addition of squills, in the coughs of old people attended with copious expectoration, where the difficulty of breathing has become so excessive that there is danger of suffocation.

In the fourth chapter, Dr Quarin treats of hemoptysis. He observes, that this is a very frequent disease at Vienna, which he thinks may be owing to the height of their houses and stairs; and he points out the abuse of mercury as another common cause of this disease. In the treatment of this affection, he trusts chiefly to venesection. When astringents are indicated, he gives the preference to alum; and where a stronger astringent is required, he advises that a grain, or half a grain, of the vitriol of iron should be added to each dose of the alum. With regard to the use of cold drink, particularly ice-water, he observes, that almost all those to whom he has seen it exhibited have died of phthisis.

Where the disease is liable to frequent returns, he recommends a change of climate and of situation.

In the cure of phthisis, which is the subject of the fifth chapter, though he recommends blood-letting, yet he cautions practitioners against repeating it till the inflammatory crust disappears. And he affirms, that from experience he has found the inspiration of fixed air more pernicious than advantageous. He entertains a good opinion of the lichen islandicus; and although he admits that he has often employed it without advantage, yet he asserts that he never saw it productive of any bad effect, as has been alleged by some. It at least affords, he alleges, excellent nourishment, and has the effect of rendering milk of readier digestion, and making it sit more easily on the stomach.

Although the Peruvian bark has been condemned by many in cases of phthisis, yet Dr Quarin looks upon it as one of the best remedies, particularly where the disease follows an open vomica; and indeed he considers it as the only thing which gives any chance of success, where phthisis arises from an inter-

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mittent or remittent fever. He prefers, however, the bark in decoction to its use in substance; for the latter, he allows, has sometimes the effect of checking expectoration. When the patient is very pale, and without any acute hectic fever, he advises, in conjunction with the bark, the watery extract of myrrh conjoined to the sugar of milk; but he thinks that the myrrh should always be used with great caution where the patients have before laboured under hemoptysis. He condemns the use of all the balsams, even of the genuine balsam de mecca, which some have highly extolled on account of its peculiar flavour.

In treating of the means of obviating particular symptoms in phthisis, he observes, that some have proposed as a remedy for the colliquative sweats the use of agaric, taken to the quantity of two grains. But he never found it of any benefit to the patient; on the contrary, he tells us that it often produced great oppression at the breast. He considers a decoction of the bark with a small quantity of vitriolic elixir as the best remedy in those cases. For restraining a colliquative diar-

rhœa, he recommends a decoction of salep, the powder of the falicaria and paregorics.

As a means of furnishing good chyle to phthifical patients, he advises milk diet, and gives the preference to human milk over every other. He thinks that advantage may sometimes be derived from conjoining Seltzer or Spaw water with the milk; but he is a violent opponent to the use of large quantities of any water. As articles of diet, he is for allowing patients the use of broth of snails and frogs, or of raw oysters, as mild and nutritive articles; but he cautions against their being employed in such quantities as to load the stomach. He recommends that food should be often given to phthifical patients, but always with a sparing hand; and he advises pure country air in preference to that of large cities. But he thinks those situations are exceptionable which are near mountains, because there very sudden changes of weather are apt to take place.

He represents asthma, the subject of which he next treats, as being frequently an incurable disease, young people seldom recovering from it, and old people never. In the hu-
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mid asthma, he recommends, with the interposition of purgatives and acrid glysters, kermes mineral, gum ammoniac, and an infusion of the tops of the dulcamara. He never, he tells us, saw any benefit from the extract of tobacco, which by some has been highly recommended in this affection.

In the convulsive asthma, he advises, during the paroxysm, saffron, the spirit of sal ammoniac, and opiates; and in the intervals between paroxysms, friction of the spine, riding, and pills consisting of valerian, galbanum, and assafoetida. When asthma arises from a large quantity of fat about the heart, it is, he tells us, to be removed by low diet, consisting chiefly of garden stuffs, by hard exercise, by care, and by watching.

He next treats of the hydrops pectoris, which he represents as a disease occurring more frequently than is commonly imagined. In the beginning, he observes, it is often very difficult to distinguish it, and in its progress it is often incurable. In the treatment, he tells us, that he has in general found both the extract of tobacco, and the arnica, which has been very much employed at Berlin, to

be inefficacious. He condemns the use of purgatives and of sudorifics in this disease, and thinks that the only mode of combating it is by an increase of the urinary discharge; for this purpose he considers squills as preferable to every other medicine: and he observes, that besides operating as a diuretic, he has in some instances seen salivation excited by means of this article, but without that uneasiness of the gums which attends mercurial ptyalism. He condemns the paracentesis of the thorax in this disease; but thinks that benefit may sometimes be derived from scarification of the legs.

The subject of the eighth chapter is ascites. After some observations on emetics, cathartics, and sudorifics, as employed in the cure of this disease, he next makes some remarks on diuretics; and of all these, he considers squills as the best, particularly when given under the form of the powder of the dried root, or of the watery extract. He never saw any benefit from the colchicum, although considered by some as nearly approaching to squills; nor did he obtain better effects either from the extract of the lactuca virosa or from
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the gratiola. In certain cases, he has seen good effects from the tonic pills of Bacher; the formula for preparing which has been some years ago published by Mr Ricard. The basis of these pills, of which we gave an account in the second volume of these Commentaries, is an extract formed from the root of the black hellebore. But Dr Quarin is of opinion, that he has seen more benefit from employing the hellebore under the form of infusion, combined with vegetable bitters, particularly when the ascites is attended with obstructions of the viscera, or with a glutinous state of the fluids. He recommends the following formula :

R. Absinth. Pont.

Saponar. utriusque unc. unam.

Rad helleb. nigr. drachmam unam.

Coque per quartam horæ partem in aquæ
fontis, q. s. colaturæ, lb. i. adde,
Oxymel. scillit.

Syr. de duabus utriusque unc. unam. M.

Of this mixture he advises an ounce to be taken every second or third hour. Care, he observes, must be taken that the helleborus viridis of Linnæus be not used in place of the helle-

helleborus niger. But if this does not produce a copious discharge of urine, he advises that squills should be conjoined with it. In very lax habits, after the water is evacuated, he recommends the *tinctura martis* conjoined with a proportion of the extract of hellebore.

Vomiting of blood, although an alarming disease, he represents as being in general free from danger, particularly when it arises from obstructed menstruation. Scorbutic patients, he observes, sometimes vomit blood; but in that case it is rarely grumous, and in general resembles the washings of flesh. This affection scarcely, he tells us, admits of a recovery.

Though he allows that cholera is more frequent in August than in other months, yet he considers this as being chiefly the consequence of warm days succeeded by cold nights; and he thinks the disease is more owing to acrid bile than to the abuse of acid or refrigerant fruits. He thinks that the cure is to be entirely trusted to opium; to which he advises that recourse should immediately be had, a few drops of liquid laudanum being exhibited every four or five minutes.

In

In dysentery, which is the subject of the eleventh chapter, Dr Quarin observes that the cure is very much varied according to the variety in the nature of the disease. After some observations on blood-letting, emetics, and cathartics he observes that the *salicaria* is here preferable to other demulcents; and he advises it to be given either under the form of powder, or in a mixture, to the extent of a scruple every second or third hour. In the putrid dysentery, after the body has been sufficiently purged, and after there is no longer any fear of inflammation, if diluents and demulcents be not productive of the desired effect, he advises the *cortex fimarouba*, and the *fuccus catechu*; but he condemns the use of alum. In certain cases of this disease, he recommends that a decoction of the root of *tormentil*, with a proportion of gum Arabic and camphor, should be used by way of injection.

Jaundice is, he observes, a disease sometimes easily cured, sometimes proving fatal in a very short time. While the cure is much varied, according to diversity in the cause of the affection, he observes, that in some instances

stances he has overcome obstinate dysentery, resisting every other mode of cure, by the long continued use of ripe summer-fruits. In cases where the disease arose from schirrosity, he has often given the belladonna. To a few it was of advantage; but to the greatest number it afforded no relief.

In treating of hæmorrhoides, he observes, that the disease is now more frequent at Vienna than formerly, although wine be used more sparingly. This, he thinks, may perhaps be owing to the abuse of aromatics, or to the want of exercise, and to the practice of riding more frequently in carriages. Against the hæmorrhoides cecæ, among other remedies he mentions the juice of the root of the tarraxacum as being sometimes of service. Where an excessive discharge takes place from vessels seated so high in the intestines as not to admit of the immediate application of astringents, Dr Quarin considers the internal use of the vitriol of iron as very advantageous. Opium, he observes, does not agree with these cases, and is only admissible when the discharge is supported by severe tenesmus. For the prevention of hæmorrhoids, it is necessary

cessary to obviate constipation; and for this purpose he recommends the use of mineral waters gently purgative.

In the two succeeding chapters, Dr Quarin treats of arthritis and podagra; which, following Van Swieten, he considers as different diseases. Where arthritis has been the consequence of acid, he strongly recommends the use of soap. And he mentions the case of a man who had been affected for a long time with severe arthritic pains in different parts of his body, notwithstanding the use of various remedies. Recollecting that this man had been long accustomed to the use of diluted vitriolic acid, he prescribed for him the following mixture:

R. Ol. amygd. unc. unam.

Syr. alth. unc. duas,

Vitel. ovor. q. s.

Diu simul tritis et subactis, adde

Aq. commun. unc. decem.

Sal. tart. semidrachmam. M.

By this medicine, taken twice, his severe pains were removed. Narcotics, he alleges, although giving immediate ease, yet render arthritis more obstinate; and he considers
opiates

opiates as prejudicial in the febrile arthritis, even although blood-letting be premised. He mentions the *oleum terebinthinæ* conjoined with honey, as having in some cases been productive of advantage where there was no fever; but he could never observe its diaphoretic power. With regard to cold bathing, he affirms, that although it has been useful to some, it has been prejudicial to others; and he observes, that though the American Indians are in the frequent habit of using it, even from earliest infancy, yet that many of them fall victims to inflammatory diseases occasioned by the vicissitudes of the weather.

With regard to podagra or proper gout, he condemns the opinion of those who ascribe it to the acid of wine. He thinks it chiefly arises from very full diet, neglect of exercise, excessive venery, and intense study. He observes, however, that he knew an instance of two brothers, descended from a gouty father; the one of whom was severely distressed with the disease, although he lived in the most sober and regular manner; while the other was entirely free from it, although indulging in every excess that could be supposed to induce

duce it. As no proper cure for this disease is yet known, he contents himself with delivering a few precepts respecting the treatment of it, most of which are very generally received; particularly those which respect blood-letting, purgatives, sudorifics, opiates, and topical applications. He observes, that quassia has been recommended by some; but alleges that every benefit to be obtained from it may be had from gentian.

In the last chapter of this work the author treats of venereal affections. In the treatment of gonorrhœa, he recommends strongly diluents and demulcents. He condemns entirely the use of saturnine injections, as inducing severe pains both in the belly and limbs; but when the running is of long continuance, he advises astringent injections, as decoctions of tormentil and Peruvian bark. For the removal of warts and condylomata, he recommends lime-water, a solution of alum, or corrosive sublimate. He considers the pulv. *Sabinæ* as scarcely deserving mention.

Against venereal ulcers, especially when occurring in the fauces, with a hectic state of the body, and yielding a thin acrid ichor, he

has found great benefit from the following powder, taken three or four times every day :

℞ Extract. gratiol.

Pulv. Foenic.

—— Lap. cancror. aa. gr. quinque. M.

This medicine, he tells us, acts chiefly by increasing the discharge of saliva and of urine ; it seldom purges, and almost never excites sweating. After several observations on the use of sarsaparilla, guaiac, lobelia, antimony, and mercury, in different forms, as employed in cases of lues venerea, he takes notice of a remedy which he tried on the recommendation of Baron de Stork. This remedy is the root of a species of the astragulus ; by which, it would seem, that the venereal disease has long been cured by some old women in Hungary. Dr Quarin employed it under the following formula :

℞ Astragali exscapi, unc. sem.

Coque in quindecim uncias aquæ donec superfit. lb. i. sumat æger tepide mane et vesp.

This decoction, he tells us, has a very agreeable taste, approaching nearly to that of liquorice:

liquorice. He gives here a particular relation of four cases in which it was employed with success. In these it operated by stool, by urine, and by sweat; but without occasioning any great inconvenience to the patient. A favourable change was soon induced in the symptoms, and in no long time a complete recovery. Although there can be no doubt that the prudent use of mercury affords, in most instances, both an effectual and a safe cure of lues venerea; yet as there are constitutions to whom it cannot be given without great hazard, and as there are cases which, from particular circumstances, seem to resist its power, the discovery of another remedy, by which the disease may with certainty and ease be combated, is of no small importance in practice. And if future experience shall afford confirmation that the astragalus exscapus is productive of this effect, it may be considered as a very useful addition to the materia medica.

VIII.

An Account of a singular Disease which prevailed among some poor Children maintained by the Parish of St James's in Westminster. By Sir George Baker, Bart. Physician in Ordinary to the Queen, Fellow of the College of Physicians, of the Royal Society, and the Society of Antiquaries in London, and of the Royal Society of Medicine in Paris. Vide Medical Transactions, Vol. III. 8vo, London.

ALTHOUGH, from the singularity of the disease here treated of, there is reason to presume that it will not be frequently the subject of practice, yet the attention which the learned and judicious author has employed in endeavouring to investigate its causes, may, we apprehend, be of no inconsiderable use in the prevention of different affections.

In the end of September 1783, seventy-three

this disorder, some of these patients had been subjected to several attacks, and had several times been relieved principally by the use of purgative medicines; but that within the two last days the attacks had been more violent, that the intervals of ease had been shorter, and that the delirium had scarcely ever ceased entirely. It had likewise been observed, that sickness at stomach had usually been the leading symptom; that the bowels in general had been in a costive state; but that, in three instances, a spontaneous discharge by vomiting and looseness had given immediate relief, and had stopped the farther progress of the disease. The costiveness which commonly occurred was occasionally removed without much difficulty. During the remissions, the children lay quiet sometimes for an hour or two; after which they suddenly started up, screaming with afflictive torture. When they were able to give a consistent account of their own sufferings, they all agreed, that, upon the approach of the fit, their first sensation of pain was in the stomach. After this abated, which generally happened in a few minutes, the head, particularly the
back

back part of it, was attacked in a similar manner ; and to this a total perversion of the understanding soon succeeded. None of them had any degree of fever ; and during the most violent paroxysms of pain, the stomach and bowels seemed to the touch soft and natural. It was also observed, that their paroxysms were always most severe immediately after sleep.

Upon diligent inquiry respecting the state of health of the other inhabitants of the house, Sir George found, that in general they had been very healthy ; and he could discover no cause of disease either in the food employed or in the vessels in which it was dressed. He observed, that the disease affected females only, and that it was confined to those who slept together in a certain room on the second floor. It was natural, therefore, to inquire in what circumstances this chamber differed from the other apartments. The height of it was little more than eight feet, the length twenty, and the breadth sixteen. It contained ten beds, in which it was intended that eighteen girls and a female servant should sleep. But this being a favourite room, it

was generally crowded at night by a much greater number than its just complement. That as much space might be made for beds as possible, the chimney had been stopt up with brick ; and it had been the constant custom of the servant to keep the door shut, and to close the window-shutters, at night. This chamber had been painted no long time before, as well as the rest of the house ; and Mr Rennel the apothecary observed, that when he was called to it in the middle of the night, he found the smell of paint very disagreeable to him, although he had hardly perceived it during the day. From the time of the commencement of this illness, three candles and a lamp with oil had commonly been used during the night ; and the attendants in general agreed that they were hardly of any service, giving but a glimmering light, and frequently almost extinguished.

It was remarkable, that in a chamber adjoining, of the same dimensions, painted at the same time, and inhabited by as many girls, but differing from it in having the chimney open, and in not being kept so closely shut up, no symptom of the disease had
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appeared in any of the children. It was also another remarkable circumstance, that a female servant who had passed one night only in the room where the sickness prevailed, was on the following morning attacked by the same pain, delirium, and convulsions, under which she suffered most severely. It was farther remarkable, that the disease affected only the nine elder children, all of them above thirteen years of age.

Having given this account of the disease, and the principal facts respecting it, Sir George mentions several instances upon record, where the accidental sight of a patient suffering an epileptic attack had immediately occasioned a similar attack in others, and where convulsive affections have been induced by imagination alone. But he remarks, that in the present case each paroxysm was preceded by the most painful irritation, of which it was evidently the immediate effect. Hence he infers, that it was not here propagated from one person to another, but that some common external cause prevailed, by which the nerves of the stomach were affect-

ed, and, in consequence of this, the nervous system in general.

For combating this affection, the advice given by Sir George Baker was to evacuate the chamber of the sick without delay ; to separate the healthy from the diseased ; to open the chimney ; and to remove whatever tended to exclude fresh air. These directions were immediately put into execution, and the patients passed a quiet night entirely free from every symptom of disease. Upon awaking, however, next morning, they were all seized in the usual manner ; but the fits returned with less violence, sometimes without convulsions, and the delirium gradually abated. Thus, for some days, there was every reason to hope that the malady was about to cease entirely : But on the night of the 6th of November the affection returned with violence ; and in the morning of the 7th, Sir George found them all, after having passed many hours in pain and convulsions, in a most outrageous state of insanity, which continued the whole day. After that the disorder made no general attack ; and although they had separately several returns of pain in the stomach
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and bowels, yet these were less violent, and were seldom followed by convulsions. At length the lower bowels only were affected; and with most of them the stools were attended by a painful irritation at the rectum; and they had great difficulty in discharging urine.

In this manner the disease terminated, all the patients soon recovering their strength and spirits, excepting the servant maid, who was afterwards subject to frequent attacks of severe headach and giddiness; and after any extraordinary exertion of strength, was observed to have a wildness in her countenance, which, however, was not followed by any degree of convulsion.

The author points it out as a circumstance worthy of observation, that the disease made no farther progress from the time that the chamber of the sick was evacuated, although during the preceding night no less than three persons had their first seizure. With regard to the effects of different remedies occasionally employed with these patients, he observes, that opium gave some relief to the pain of the stomach, but that it was suspected to aggravate

vate the headach, delirium, and convulsions. Some other antispasmodics were found to be useless. Blisters, particularly when applied to the region of the stomach, were certainly beneficial. Emetics had always a good effect; senna never failed to increase the tormina, and seemed to hasten on the convulsions. The oleum ricini seemed at first sufficiently powerful; but afterwards purgatives of greater efficacy were necessary.

As a proof that this disease was the effect of impure air, Sir George Baker here relates a case communicated to him by that very respectable physician Dr Heberden, of a young man who had been for some time shut up in a room with burning charcoal. He continued in it till two small birds fell down dead in their cages. He was then so ill as to be obliged to go into the air. He had no sooner done so than he fell down senseless. When he came to himself, he complained of giddiness, sickness, a pain of his stomach and loins, and of stupor. All these symptoms continued the whole day. Next day he thought himself better; but about seven in the evening, he

he was seized with a very violent pain in his stomach and loins ; he vomited, threw himself down upon the ground, fell into convulsions, and could hardly fetch his breath. After he had a little recovered himself a second fit of the same sort took place. This was succeeded by delirium ; and it was with difficulty he could be kept in bed during the whole night. In the morning he had some quiet sleep ; after which he was free from the delirium : but the pain was not entirely gone ; and he continued to complain of giddiness, and of strange sights before his eyes, for some time longer. As facts somewhat analogous to this, he mentions, that Dr Garthshore, an eminent practitioner in midwifery, and an accurate observer of those diseases which fall particularly under his notice, has often seen dangerous convulsions induced immediately after delivery, when a close unventilated chamber has for a long time been crowded with the attendants and friends ; and that, after the most exact attention and strictest inquiry, he has not been able to ascribe these to any other cause than the long continued inspiration of air, saturated

turated with animal and other septic exhalations.

In reasoning upon this subject, he endeavours to show, from the experiments of Dr Priestley upon respiration, and from the practice of the ancients in purchasing slaves, as recorded by Apuleius, that the contaminated air acts by preventing the escape of phlogiston from the blood, which always takes place when respiration is performed in pure air.

From these facts and observations, Sir George Baker thinks that a probable reason is afforded why those who inhabit houses where, for the sake of warmth, every art has been employed to exclude the outward air, and who spend much of their time in air tainted by animals and burning candles, are subject to nervous disorders; and why this habit of life is particularly hurtful to the tender and valetudinary. He even conjectures, that the numerous palsies of late so frequent in London may have originated from this source. Whether this conjecture be in any degree well founded or not, there cannot be a doubt, that

that the cautions naturally suggested, with respect to the preservation of pure air, from the facts related in the paper before us, well deserve the serious attention of every medical practitioner anxious for the preservation of health or the prevention of disease.

IX.

A Letter to Sir George Baker, Bart. on the successful use of the Preparations of Lead in some Hæmorrhagies. By Henry Revell Reynolds, M. D. Fellow of the College of Physicians, and of the Royal Society, and of the Society of Antiquaries in London. Vide Medical Transactions, Vol. III. 8vo, London.

SIR GEORGE BAKER, in his excellent essays on the properties of lead, had oftener than once expressed his regret that the preparations of that mineral, although possessed of singular powers in restraining hæmorrhagies, cannot be used internally with safety. Dr Reynolds, therefore, flatters himself that Sir George Baker, for whom he expresses the highest esteem and friendship, will learn with satisfaction, that he has frequently employed both the tinctura saturnina and saccharum sa-

turni with success and safety, and without the least colic ensuing.

It would seem that he first began this practice about ten years ago with a woman who was a patient in the Middlesex hospital. She was between forty and fifty years of age, and laboured under a violent hæmorrhage from the uterus, without any particular pain in the region of that viscus, and without any signs of scirrhus in it or its appendages. She was very much reduced in flesh and strength; and he observed her daily to sink under the continuance of the discharge, although various means were employed to check it. He ordered her to take twenty drops of tinctura saturnina every four hours in a convenient vehicle. The third dose of this mixture lessened her flux, but produced a most violent colic. The apothecary very prudently ordered her to desist from the tincture, and gave her an opiate. The colic, however, did not yield soon or easily. But the pain was at length removed by repeated doses of opium on the third day, and she was purged with cathartic salt.

On the fourth or fifth day the hæmorrhage

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returned with as much violence as before. Dr Reynolds determined again to have recourse to the same medicine, and to try at the same time to prevent its mischievous effects upon the bowels. Concluding that the lead had excited a peculiar spasm in the bowels, and that this spasm yielded more readily to opium than any other means, he thought it probable that it might be prevented by exhibiting opium along with the preparations of lead. He therefore ordered fourteen drachms of the saturnine tincture, and two of the thebaic tincture, to be mixed together; and of this mixture he directed twenty drops to be taken every four hours in a little barley-water.

The event satisfied Dr Reynolds's utmost expectations; for in twenty-four hours the flux was very much diminished, and in forty-eight it entirely ceased. Not the least colic was now produced, though the medicine was afterwards taken morning and evening for several days successively. The belly was either spontaneously open, or was tendered so by the most gentle means. The poor woman went out of the hospital in good health: she

soon recovered her flesh and strength; and Dr Reynolds saw her two years after, when she continued well.

Encouraged by the success in this case, Dr Reynolds adds, that he has since exhibited the same mixture in the same dose to seven other patients labouring under hæmorrhage. In all these cases it has been used with success, and without once exciting colic. Till lately he has never used the saccharum saturni: But he observes, that within the last four months he had employed it in three cases. The first case in which he administered it was that of a young gentleman labouring under an hæmoptysis. He gave it in the following form:

℞ Sacch. saturn. gr. i.

Conf. ros. rub. gr. iv.

Tinct. theb. gut. iii. f. pil. sextis horis sumenda.

In two days the sal. plumbi was increased to a grain and a half; and the tinct. thebaica to five drops, in each pill; which he continued for seven or eight days.

Before he took this medicine, although he had been bled several times, had taken nitre

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and other neutral saline medicines freely, and had been restrained from all food excepting rennet-whey, barley-water, and fruit, his pulse had been full and hard, and had beat 108 strokes in a minute. After he had taken it four days, his pulse became soft and less full, and beat no more than seventy strokes in a minute. The spitting of blood ceased on the fourth day from his taking this pill, and did not return. During the time of his taking it, he had regularly two motions every day; and he never once complained of the least pain in his bowels.

The second case was that of a lady in her fifty-second year, labouring under an uterine hæmorrhage. She took the *sal. plumbi* at first to the extent of half a grain, with two drops of thebaic tincture, and afterwards to the extent of a grain, with four drops, made into a pill, with a little conserve of roses. It had the happiest effect on the hæmorrhage without any injury to the bowels; and she was soon restored to perfect health.

The third case was that of a man in his thirty-sixth year, labouring under an hæmorrhage from the nose, and who had lately been affected

affected with a very severe venereal complaint, for which he had been salivated. He took the sal. plumbi to the extent of a grain and a half, united with four drops of the thebaic tincture, every six hours for a week, with the effect of preventing any return of the bleeding, and without any sensation of colic.

Dr Reynolds concludes with remarking, that it is by no means his intention to recommend the indiscriminate use of these medicines, being fully aware of their deliterious qualities: but that his only wish is to mention the manner in which he has used them with effect and with safety. And if the combination here used be in other cases attended with similar success, it will be of no small importance in the practice of medicine.

X.

Some Experiments made upon Rum, in order to ascertain the cause of the Colic frequent among the Soldiers in the Island of Jamaica in the year 1781 and 1782. By John Hunter, M. D. Physician to the Army. Vide Medical Transactions, Vol. II. 8vo, London.

WHEN Dr Hunter acted as physician to the army in Jamaica, a colic, in all its circumstances and in its consequences resembling the painter's colic or colica pictorum, prevailed among the soldiers at different times and in particular situations; while at other times, and even at other places of the island at the same time, the troops were not affected by it. Every circumstance which might tend to discover the cause of this disease became an object of importance, both on account of the violence of the symptoms and

and the great number who were seized with it. Add to this, that it often terminated either in a palsy of the extremities, or in such a degree of weakness as to render the man incapable of future service.

Dr Hunter's inquiries to discover the cause of this affection seem to have been conducted with no less judgment than success: While at the same time he has, we are hopeful, been equally successful in pointing out a very easy mode by which it may afterwards be prevented among troops in similar situations.

He observes, that among the practitioners in the island different causes were assigned for this disease. All these, however, might be reduced to three; bad water, acid fruits, and bile. It was first, therefore, necessary to inquire how far there was reason to believe that any of these suppositions were well founded.

The inhabitants of Spanishtown, he observes, used the same water with the soldiers, both being supplied from the river; yet neither they nor the officers suffered from the colic, as they most undoubtedly would have done had the cause been in the water. He

readily admits, that acid fruits will sometimes occasion an affection of the bowels. But then the disease is attended with looseness ; while an obstinate costiveness was the characteristic symptom of the colic of which he here treats. He farther adds, that its attacking one regiment, while another similarly situated almost entirely escaped it ; its prevailing among the soldiers in Spanishtown at one time, and in Kingstown at another, while in both places the officers and better sort of people did not suffer at all ; are certain proofs that it was not to be imputed to any common cause, as air, water, or fruits, to which all had equally access. The suspicion of its arising from bile was, he tells us, entirely founded on bile being frequently discharged by vomiting during the disease. But it is, he observes, well known, that strong vomiting, from whatever cause it proceeds, especially when it continues for some time, will bring up large quantities of bile. Here, therefore, he considers its appearance as solely depending on the retchings ; and bile, he observes, might with equal justice be supposed to be the cause of seasickness as of colic.

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Thus then it appeared that in these causes there was nothing satisfactory. But the strict resemblance between the disease which here occurred and that to which the workers in lead are subject, afforded a strong presumption that they were owing to the same cause. He was therefore led to inquire in what way this poisonous metal could get into the constitution. As it was a very common opinion among the inhabitants of the island that the colic proceeded from drinking new and bad rum, and as he could not discover any other source for the introduction of lead, he was led to make some experiments on the rum taken from the barracks of those regiments where the disease prevailed.

He prepared a test for discovering the presence of lead, by infusing one part of orpiment and two parts of quicklime in about twelve parts of rain-water. He added a few drops of this liquor to small quantities of the rum to be tried in wine-glasses. Upon this addition the rum became evidently of a darker colour, and deposited a brownish sediment. After the rum was evaporated, the residuum was of a deeper colour than what remained

after the evaporation of pure rum. When the fluid employed as a test was added in the same proportion to spirit of wine nearly of the same strength as Jamaica rum, it produced somewhat of a milky appearance, and soon after a light-coloured sediment; and when the spirit was evaporated the residuum was of a light colour. After this, Dr Hunter took four specimens of different kinds of rum indiscriminately from a great number which had been made within the eight preceding months. Upon examining these with the test, one of them was not changed; but the other three became of a darker colour, though of different shades. After the evaporation of the rum, the residuum in the first mentioned was whitish like that of spirit of wine; in the other three it was of a dark brown colour, in the worst of them approaching to black. From these trials he could have no doubt that there is often a slight impregnation of lead in new rum, in whatever way it may be introduced.

Having thus ascertained the presence of lead in the rum, to which there can be little doubt that this colic is to be attributed, he

next

next inquires from what source it is derived. From observing the action which rum has upon lead, and from examining the composition of some of the worms used in distilling this spirit, where lead is for cheapness substituted to tin, he concludes that the impregnation arises from this source. And he imputes this impregnation existing more frequently in rum than in home spirits, to the worms used in the West Indies being often of a baser metal than those used in the home distillery, to more acid arising in the distillation of rum, to the distillations not being so often as with home spirits, and to the rum finding its way into immediate use. For it is to be observed, that in old rum no impregnation is to be detected. By keeping, the rum entirely deposits the lead, if it ever contained any.

From these circumstances, the necessity and propriety of directing that the rum with which troops are served should be old is sufficiently manifest. Dr Hunter does not take upon him to say what length of time is necessary for the deposition of the metal. But it is the common opinion of the inhabitants

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of the island, probably founded on observation, that rum loses its noxious quality in the space of one year. Hence in the contracts made for rum, this age should always be a necessary condition. But the troops in the West India islands are not merely in danger from the rum which is furnished to them; they are in still more danger from what they purchase themselves at the small retail-shops. For there, new spirits of the worst quality are sold; and this spirit many of the soldiers are apt to prefer, as tasting both stronger and hotter. It is not, however, likely either that the retailers of this noxious spirit, even if convinced of its pernicious effects, would desist from their trade, or that the soldiers would give up drinking it, although well assured of its being the cause of the worst diseases. It becomes, therefore, of consequence to ascertain a cheap, easy, and effectual method of doing away the impregnation of lead, without at the same time injuring the spirit. This, Dr Hunter observes, may be done by different additions; as for example, by the vegetable alkali and by the muriatic acid.

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But he considers the vitriolic acid to be preferable to any other substance for this purpose, as it precipitates the lead most quickly and most effectually; while a very small quantity of it will be sufficient to do away the strongest impregnation of lead that is ever found in any rum. He concludes, that even three drops of the strong spirit of vitriol would do away the impregnation in two gallons of rum. From this addition, even supposing that the rum contained no lead, it is evident that neither the slightest bad effect, or even disagreeable taste, could arise; while the rum, not used in its new state, would continue equally well suited to be in other respects meliorated by age.

It is therefore earnestly to be wished that the distillers of rum in the West Indies would in all cases add to the new spirit a proper proportion of this acid, before they allow it to go out of their own hands, and particularly before they dispose of it to retailers in the islands. If by this means the disease so frequent and so fatal in the West India islands, and there well known by the title of
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the Dry-belly-ake, can be prevented, Dr Hunter may justly be considered as intitled to their warmest thanks for the attention he has bestowed in investigating the cause of this painful and dangerous disease, and in pointing out the mode of counteracting it.

XI.

An Account of a singular cure of a Dropsy.

By George Pearson, M. D. Vide *Medical Transactions*, Vol. III. 8vo, London.

ALTHOUGH the practice of discharging dropical water by scarifications of the inferior extremities may be considered as of very old date, yet it has never been generally adopted. And this indeed is not to be wondered at, when we consider the very great inconvenience with which it is frequently attended; not only giving rise to ulcers never healing, but sometimes producing gangrene proving speedily fatal. The following case, however, serves to show with what freedom and with what advantage it may be employed in some habits.

A surgeon near Doncaster, in the 25th year of his age, of a plethoric habit, who had been subjected to frequent catarrhs from cold, was,
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in November 1779, affected with a considerable swelling of the inferior extremities, and some swelling of the hands and arms. Notwithstanding various remedies, these dropfical symptoms increased in such a manner, that at the end of about three months there was a general anasarca, a considerable ascites, and many symptoms of hydrothorax.

About this time a new circumstance in the case attracted Dr Pearson's attention. The patient observed, after awaking in the morning, that his bed was wet; and this moisture was discovered to be owing to his having scratched off the cuticle from two pimples on the upper and interior part of the right thigh, from whence there oozed a great quantity of lymph. This discharge continued from the end of January till the middle of April, when it ceased, the excoriations cicatrizing. The evacuation seemed to relieve his breathing; for if, by pressure or any other cause, it was stopped even for a short time, the oppression, anxiety, and laborious respiration, were increased. After this he applied a small blister to each leg, and to the upper part of each hip, which discharged much lymph; but they

soon healed without any unusual inflammation.

He was for some time after affected with sickness of stomach and vomitings, by which large quantities of water were thrown up. But about the beginning of May these began to abate, and his appetite became voracious. Having tried various purgatives and diuretics to little purpose, he ordered nine punctures to be made with a lancet just below the calf of his leg. From these a considerable quantity of water was discharged: for in fifty-six hours Dr Pearson saw six quarts of it measured; and he thinks that the cloths put round the legs, which were frequently changed, could not contain less than four more. This lymph did not, Dr Pearson observes, coagulate by the heat of boiling water; but upon evaporation it left a sediment which consisted chiefly of sea-salt. It contained fixed air, as appeared from its rendering lime-water milky. From this discharge all the swellings were lessened, excepting those of his legs and thighs, and he became very cheerful.

These punctures healed in a few days
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without inflaming. When they healed, he applied a scarificator with ten lancets to another part; and between the end of May and the end of August he had been scarified with this instrument on different parts of his legs and thighs forty-four times. According to the best calculation, twenty gallons of water had been drained off in this way. During the course of it, he took a journey to London; and the discharge was so considerable, that the chaise in which he travelled was kept constantly wet, and his shoes were often full of water.

From the time that he began the scarifications, he took no medicine excepting the decoction of bark with chalybeate wine; and while in the neighbourhood of London, he drank the Islington Spa-water. Dr Pearson saw him a year after, when he was informed that he had gradually acquired his usual strength, and was then in perfect health.

XII.

An Account of a Disease occasioned by transplanting a Tooth. By William Watson, M. D. Fellow of the College of Physicians, and Vice President of the Royal Society. Vide Medical Transactions, Vol. III. 8vo, London.

AMONG the modern improvements in surgery, that of transplanting teeth has unquestionably no inconsiderable share of merit. For there can be no doubt that a tooth taken from one head and properly introduced into another, will remain fast in the socket, assisting equally with the other teeth in mastication, preserving distinct articulation in speech, and preventing any deformity in the mouth. But while this operation in the hands of skilful practitioners is in general followed by these consequences, it sometimes happens that it is productive of a disease of a

very dangerous nature : And in the paper before us, we are presented with a well authenticated and very accurate history of a case of that affection.

An unmarried lady, in the twenty-first year of her age, of a delicate habit, but in other respects in perfect health, observing one of the incisores of her upper jaw to become black and carious, determined on having it replaced by a sound tooth. This was accordingly done by an able dentist ; the tooth which was introduced being taken from the mouth of a person apparently healthy in every particular. The tooth fitted exactly, and fastened exceedingly well ; so that the dentist, on account of its firm state, removed the silk employed to fasten it to the neighbouring teeth sooner than he was accustomed to do. But about the end of a month, her mouth, which had continued all that time a little tender, became very painful. Her upper gums were at first inflamed and enlarged ; afterwards they were discoloured and ulcerated. This ulceration spread very fast, infomuch that the gums of the upper jaw were corroded away and the alveoli left bare. Before another

ther month was at an end, the ulceration occupied the whole space under the upper lip between the teeth and the nose; it extended likewise to the cheeks and throat, which were corroded by large deep and fetid ulcers. Soon after this, part of the alveoli of the upper jaw became carious, one of her teeth dropped out; and in a few days a second tooth, together with the transplanted tooth, which hitherto had remained firm in its place.

About this time blotches appeared on her face, neck, and various parts of her body; and several of these became ulcerated sores. The fetid discharge from the mouth and throat had for a considerable time deprived her of sleep; and the soreness of the parts had prevented her from taking nourishment. And, in addition to these, the soreness from the external ulcers induced such a degree of fever that her death was soon expected.

When Dr Watson was consulted, concluding that all her fluids were in a most putrid and acrimonious state, he directed the Peruvian bark combined with gum myrrh in large doses, both being found by experience to be

powerful antiseptics ; and these were conjoined with ass-milk.

After this plan had been tried for some days, no benefit seemed to result from it ; and it was also found, that from the enfeebled state of her stomach she could not take these medicines in sufficient quantity. It was therefore determined to make trial of mercury as another powerful alterative. A scruple of calomel made up with the rob sambuci was formed into ten pills ; and one of these was directed to be taken once or twice a-day as her bowels would bear them. Of these she took fourteen ; when, on account of severe griping and purging, which could scarce be mitigated by large doses of thebaic tincture, they were laid aside. But during the time she took these, the ulceration of her mouth and cheeks did not spread : they were less painful, and of a milder appearance. The blotches on her face and body grew paler ; such of them as had ulcerated healed apace, and no new one appeared. From this Dr Watson thinks it was manifest that mercury was the proper corrector and true alterative in this case.

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On this account, as it was found her bowels would not bear mercury by the mouth, it was directed to be rubbed into her legs and thighs twice a-day in small doses. In about ten or twelve days her griping and purging returned with violence; the ointment, therefore, was obliged to be discontinued. The good effects of the mercury, however, were very apparent: for at this time the blotches were all gone; the ulcerations in her face and body were completely healed; and those of her mouth were nearly so. It did not appear that during this part of the treatment the mercury took in the least to her gums or salivary ducts; an event much to be dreaded.

At this period, however, she continued to be in a dangerous situation, being much weakened, labouring under frequent returns of feverish heat, and being every night oppressed with colliquative sweats. To obviate these, she returned to the use of asses milk and other restoratives, and took as much decoction of bark as her stomach and bowels would bear. And as the weather was fine, she was frequently taken a few miles in a carriage as her strength would permit. Du-

ring this period of her illness, Dr Watson remarks that she became deaf in a great degree, and that at times small portions of the carious alveoli exfoliated, and came away with the sloughs.

By the means related, the symptoms mentioned above grew milder, and she recovered some degree of strength. She now expressed a desire to return to her usual residence about eighty miles from London. This was readily agreed to, as a change of air bade fair to assist her. She was directed to proceed by such short stages only as her health would bear; and she was advised as soon as she got home, to continue the decoction of bark with asses milk and other restoratives, and to return to small doses of mercurial ointment. This last was strongly enjoined; for although the symptoms for which the mercury had been directed were totally subsided, yet the quantity used both externally and internally had, on account of her weak and irritable bowels, been but small when compared with the magnitude of her disease. And it is well known, that to prevent a return of those symptoms

toms for which mercurials are particularly administered, they should be persisted in for some time after the symptoms have disappeared. But upon her return to the country she became no better ; and without any new complaint, her strength gradually lessened, till death put an end to her sufferings.

After having given this history of the disease, Dr Watson subjoins some observations respecting it. He thinks it very remarkable that a tooth drawn from an apparently healthy young person, and inserted into the jaw of another young person of irreproachable conduct, should have such baneful effects, and convert the fluids, first of the part near the insertion, and afterwards of the whole habit, into a putrid corroding sanies. At first, he observes, the cause operated but gently, and a tenderness only of the gums was perceived ; but afterwards its operation was the most active and violent he had ever seen in any disorder at all similar to this. As its progress was not impeded by the most powerful antiseptics in liberal doses, and as it gave way to mercurials even in small doses, there is good

ground for suggesting that the taint was truly venereal.

Although Dr Watson be fully aware of the great subtilty of animal poisons, and admits, that by a very small quantity of virus the venereal as well as the variolous infection may be produced, yet to this supposition there were here great difficulties. The person from whom the tooth was taken was perfectly well, and never had any venereal taint. The gums and teeth from observation were perfectly sound; the tooth after being drawn was soaked in warm water, and afterwards before insertion washed and wiped as clean as possible: so that even, for the sake of argument, supposing disease, it is difficult to conceive how an uninfected part can convey contagion.

On the other hand, admitting that the young lady, who is the subject of this paper, had received the infection in any other way, it is difficult to conceive how it should have had so violent an effect upon the mouth, and left other parts, as the pudendum, entirely free. In whatever way therefore the cause of this malady is sought for, Dr Watson
thinks

thinks that great difficulties present themselves. But although the cause of this affection may still be considered as involved in some obscurity, yet the faithful and accurate representation of facts here given may be considered as some progress both towards ascertaining this and the method of cure.

XIII.

On the Efficacy of the Spiritus Vitrioli Dulcis in the cure of Fevers. By James Carmichael Smyth, M. D. F. R. S. Physician Extraordinary to his Majesty. Vide Medical Communications, Vol. I. 8vo, London.

THE vitriolic acid, Dr Smyth observes, has long been known as an useful remedy, and stands highly recommended by Riverius and Sydenham, for allaying febrile heat and thirst, abating inflammation, resisting putrefaction, and checking hemorrhage. But the spiritus vitrioli dulcis, a composition principally of the volatile vitriolic acid and alcohol, differs very materially from it; and when prepared in the manner directed by the London college, it shows little or no acidity to the taste, but has a peculiar pungency resembling vitriolic æther. And indeed in the pharmacopœia of the Edinburgh college, the
spiritus

spiritus vitrioli dulcis is directed to be made by adding two parts of rectified spirit of wine to one of vitriolic æther; which gives a medicine very nearly, if not precisely, the same with that of the London college, and possessing some advantages both with regard to the determinate degree of strength and facility in the mode of preparation.

This medicine, though long kept in the shops, was not frequently employed in practice; and, according to the best information Dr Smyth could obtain, never employed in the cure of fevers prior to the year 1769. From reflecting on the sensible qualities and composition of this medicine, he was led to imagine that he should find it useful as a cordial and antiseptic in cases of the putrid and malignant kind. Experience convinced him that his conjecture was well founded, and that it was possessed of powers even beyond what he had at first suspected. And in the essay now before us, he has communicated the fruits of his experience to the public; and although he confines himself to the mere duty of an historian, yet the facts he has related well deserve attention.

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Dr Smyth here gives us a particular account of five cases, being the first in which he administered it. As these are extracted from his journals minuted down at the time, and from reports taken by himself at the bedside of the sick, there can be no room for entertaining any doubt either as to their truth or accuracy.

The first case is that of a young woman about twenty years of age, who had been seized with a fever about five days before she came under Dr Smyth's care. On the 25th of October 1768, he found her affected with great weakness, lowness, and anxiety, oppression at the præcordia, with frequent sighing; and constant drowsiness, being always asleep unless roused by speaking or calling to her. Her tongue was moist and white, her neck and breast covered with many small petechiæ of a dark brown colour, the heat of her body considerably increased, and her pulse about 120 in a minute. About five o'clock in the afternoon of that day, she began to take the dulcified spirit of vitriol in the following form :

B. Spi-

℞ Spiritus vitrioli dulcis, drachmas tres.

Aquæ puræ, libras duas.

Sacchari albi, uncias duas. M.

Cap. uncias duas secunda quaque hora.

The day following her pulse was at 108 ; she had sweated after taking the medicine, had rested well in the night, and had less of the oppression and anxiety. And on the 27th she continued still easier, with her pulse at 94 ; but being costive with the continuance of her mixture, a bolus was prescribed for her, containing a scruple of rhubarb and ten grains of nitre. From this she had three stools, and next day her pulse was at 88. Though she still slept a good deal through the day, she had no complaint of weakness.

On the 29th she was free from all complaints excepting a constant drowsiness. Her pulse was now at 86. For the three succeeding days it gradually diminished in frequency till it came to 65. Her appetite returned, her medicine was discontinued, and she was soon dismissed cured.

The second case here related by Dr Smyth is that of a young man who was brought to the hospital on the 25th of October, for a fever

ver with which he had been seized about a week before. At the time of his admission his skin was extremely hot, his pulse beat 100 in a minute, he complained much of anxiety, debility, and dejection. When he endeavoured to put out his hands or to show his tongue, they were affected with a remarkable tremor. His tongue was white and moist, his countenance flushed, and the white of his eyes had a turbid appearance. There were florid petechiæ on his neck and breast, with a red rash all over his breast and arms. He was ordered the dulcified spirit of vitriol in the same manner as in the preceding case. The next day his pulse was at 80, and he said he was perfectly easy. It continued gradually to diminish in frequency for five days; by which time it had fallen so low as 56 strokes in the minute. The tremor, petechiæ, and rash, were now entirely gone, his countenance was more lively, the spiritus vitrioli dulcis was laid aside; and in a few days he was dismissed cured.

The third case is that of a woman in the 50th year of her age, admitted into the hospital on the first of November. She was of

a delicate constitution, and had for many years been subject to hysterical complaints. About a fortnight before her admission, she had been seized with a shivering, succeeded by heat, headach, pain of her back, violent vomiting and purging. The vomiting had soon ceased, but the purging continued at the time of her admission, although not so violent as at first. She was also then affected with headach, pain of the back, anxiety, weakness, lowness, and great thirst. Her pulse was 120 in a minute. The spiritus vitrioli dulcis was ordered, as in the two following cases, with this difference only, that instead of three drachms, half an ounce was put to each quart of the water. She was directed likewise to use the decoctum album for common drink. The day following her pulse was at 92 ; she had taken her medicine only three times ; her headach still continued, but the anxiety and pain of her back were greatly relieved. And on the succeeding day, though she had slept but little in the night, the purging had entirely ceased, her skin felt temperate, her pulse was at 72, and she had no complaint but giddiness and weakness.

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For this she was directed to use a decoction of the bark; and in a few days she was dismissed cured.

The fourth case is that of a young woman in the nineteenth year of her age, who was admitted on the first of November. About six days before, she had been seized with a fever and sore throat, attended with headach and vomiting. The palate, uvula, and tonsils were swelled and greatly inflamed. The inflammation was of a crimson colour, with whitish sloughs on the tonsils and uvula. She had great pain in swallowing and even in speaking, and sometimes a degree of difficulty in breathing. There was a red efflorescence on her face and arms. Her pulse was 120 in a minute. She was ordered the spiritus vitrioli dulcis in the same manner as in the two first cases, and also a gargle for her throat. Next day Dr Smyth found that she had sweated constantly, though not profusely, from the time she began to take the medicine. She had a tolerable night, being neither so hot nor having so much difficulty of breathing as before. There had been a slight hemorrhage from her nose both during the night and in
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the morning. The inflammation and swelling of the fauces were much abated; but the white sloughs on the uvula and tonsils still remained; and the red efflorescence was still to be observed on one arm. She could now swallow with greater ease, and speak more distinctly; her pulse was 78, and full; but she complained of much giddiness. The day following all her symptoms continued easier; but she had again lost a considerable quantity of blood by the nose, and was sick at stomach. Upon inquiry, Dr Smyth found that her menses were obstructed, and that this was the usual period of their appearance. But in a few days all her remaining symptoms disappeared; and she was dismissed from the hospital perfectly cured.

The fifth and last case related in this essay, is that of a woman in the fortieth year of her age, who in the end of October had been seized with febrile symptoms, accompanied with sore throat, sickness, vomiting, and purging. The vomiting was of short duration: The purging continued for a day or two longer; but, on the second of November, when she was admitted into the hospital, it had entire-

ly ceased. Her complaints then were, a fore-
ness and stiffness of her neck, violent headach,
and pain in her limbs. Her arms and hands
appeared swelled, and there was a red efflo-
rescence on her arms. The inflammation of
the fauces was in a great measure confined to
the velum pendulum palati, the uvula, and
the amygdalæ, which were of a deep red co-
lour. Her pulse was 130 in a minute. She
was ordered the spiritus vitrioli dulcis, as in
the three first cases. The next day her pulse
still continued at 130. She had sweated a
little in the night; she found herself no bet-
ter, and thought that her headach had been
rather augmented since she began to take the
medicine.

On the succeeding day, the fourth of the
month, her throat was not so much inflamed,
and the inflammation was of a paler colour;
but her pulse was 140: and being costive in
her body, she was ordered a glyster, with a
solution of cream of tartar in water for com-
mon drink. The dose of spiritus vitrioli
dulcis was increased, by being given in the
following manner:

R. Spi-

℞ Spiritus vitrioli dulcis, drachmam unam.

Aquæ puræ, uncias quatuor.

Syr. simp. drachmas duas. M.

Fiat haustus, tertiis horis sumendus.

Next day her pulse was at 130. She had got out of bed in the morning, and looked tolerably well; her tongue was clean; the inflammation of her throat was much diminished; and she had no anxiety. The cream of tartar drink had been followed by some loose stools. She thought that her medicine heated her much, although it occasioned no sweating; the redness of her arms remained; and she complained much of pain and weakness in her limbs. In this situation she was ordered to lose twelve ounces of blood, and to take the spiritus vitrioli dulcis in the quantity and form first prescribed. On the succeeding day, the sixth of November, the heat of her body was temperate, the efflorescence on her arms entirely gone, and there was only a slight redness remaining on the uvula and tonsils; but the headach and pain of her limbs still continued; her pulse was still 130 in a minute, and intermitted after every sixth or eighth pulsation. She thought, however,

that the medicine, even in the form in which it was now given, made her hot and thirsty. And as it appeared to have no effect in relieving her pains, it was discontinued, and a volatile julep was substituted in its place; which agreed well with her, and she soon recovered.

After having related these cases, Dr Smyth observes, that whoever considers them with attention, and is acquainted with the usual progress of fevers accompanied with symptoms similar to those described, will readily allow that these examples, though not very numerous, are sufficient to evince the efficacy of the *spiritus vitrioli dulcis*. Its power, he thinks, in removing the anxiety and reducing the frequency of the pulse, was too remarkable to escape the notice even of the most careless of the profession. He adds, that it would be very easy for him to give more examples of recent date, and to add to them some respectable testimonies from others: But from a desire to avoid the tediousness of many cases, he concludes his paper by giving the result merely of his farther experience.

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He observes, that any physician who shall give the dulcified spirit of vitriol indiscriminately in fevers, and expect to meet with success, will in all probability be disappointed. For although he represents it as of undoubted efficacy in certain cases, he adds, that it is by no means of general application. In acute rheumatism, and in the various forms of inflammatory fever, he considers it as extremely improper. And in hectic and pulmonary cases, the advantage derived from it is trifling or doubtful. In remittent and common putrid fevers he has sometimes also prescribed it without any apparent benefit. In such cases, however, he has never observed any bad consequences from it; and even when it failed of success alone, it has been productive of the best effects when joined with small doses of emetic tartar. In the low state of putrid fevers, he confidently affirms, that it is one of the best cordials; and he thinks that it greatly assists the bark in resisting the septic tendency of the disease.

But of all cases, those to which, in his opinion, it is most peculiarly adapted, and in which he has seen it productive of the most

sudden and surprising effects, are those fevers occasioned by contagion, or what are commonly called the jail or hospital fevers. In these, as its cordial powers are more immediately necessary, so they are in general more evident and striking. Its operation also as a diaphoretic is here, he thinks, of the utmost consequence; for it produces a perspiration or sweat, the only method by which, in his opinion, these fevers, unless in the beginning, can possibly be cured. He adds, however, in a note, that during his attendance upon the Spanish prisoners at Winchester, in the summer of the year 1780, when a very fatal jail fever prevailed among them, he himself suffered two violent attacks of the disorder; both of which he was fortunate enough to cure by a strong antimonial emetic, and afterwards by promoting a profuse sweat. This circumstance may, we think, be considered as an additional proof of the power which some have ascribed to emetics, of cutting short fevers of the very worst kind, even the plague itself, if exhibited at a sufficiently early period.

Upon the whole, he esteems the dulcified spirit of vitriol a medicine of great efficacy
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in the cure of putrid fevers in general, and more particularly so of those arising from contagion. And we shall be happy to find that the observations of others soon afford additional evidence of its utility to the degree that Dr Smyth alleges: for in that case, its introduction into practice, with a view to the cure of fevers, may justly be ranked among the most important discoveries lately made in the healing art. We are, however, sorry to say, that from any trials which we have had an opportunity of making, we have not yet had any decisive proof of its efficacy.

XIV.

Experiments and Observations on the Quilled and Red Peruvian Bark; among which are included some remarkable Effects arising from the action of Common Bark and Magnesia upon each other: With Remarks on the nature and mode of treatment of Fevers, putrid Sore Throat, Rheumatism, Scrophula, and other Diseases; in order to ascertain the Cases in which Bark may be administered, either alone or combined with other Remedies, to the best advantage. To which is added, an Appendix on the Cinchona Caribbæa. By Thomas Skeete, M. D. 8vo, London.

THE treatise now before us was originally written under the form of a dissertation to be presented to the Harveian Society of Edinburgh; and such was the opinion the society then formed of its merit, that they conferred a prize-medal on the author. Since
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that time, however, the author has bestowed no inconsiderable share of attention on this subject ; and after having made a great number of additional experiments and observations, he has now presented it to the public in an extended and improved state.

The author begins by giving a general history of the Peruvian bark, and an account of its sensible properties. After some account of the botanical character and principal distinctions which have been pointed out in the bark, he observes, that such is the variety in this article, that it can be purchased for any sum between the extremes of two shillings and ten shillings per pound. Being led to inquire into the cause of this difference, he found that the bark is originally brought to market in three forms ; the common, the second or middling, and the best. The chests of common bark weigh about two hundred and fifty pounds each ; and in these there is scarcely any thing but the coarse woody pieces, which are chiefly used for powder and for making into tinctures. The chests of the second, which are of much the same weight, are made up of a mixture of bad and good,
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and are those which the druggists garble or separate into different parcels. They yeild upon an average twenty-five pounds of quilled bark, and as much of coarse or common: the remaining part constitutes the standard middling bark, which sells in general about five shillings per pound. The best kind, which seldom weighs above one hundred and twenty or thirty pounds per chest, is almost all of the twig and quilled bark, and is only sifted before it be sold. This at particular times bears the high price of ten or twelve shillings per pound; but may be purchased in general for seven or eight. This difference in quality is a circumstance which well deserves the attention of every practitioner. And indeed Dr Skeete observes, that he has more than once known this remedy exhibited in a state of the most pressing danger, when it was of so indifferent quality, that scarcely any other effect than that of unnecessarily loading the stomach could be expected from it.

He next proceeds to an analysis of the quilled bark, with a comparison between it and the flat species. And here, from experi-

ments made in the way of distillation, he asserts, contrary to the opinion entertained by Dr Irving, in a late treatise on this subject, that the liquor collected in the receiver could not, on the strictest examination, be perceived to contain any thing like an essential oil; and from these distillations it appeared that the bark consisted chiefly, if not entirely, of fixed parts. From infusions of bark with proof and rectified spirits, Dr Skeete found the solvent power to be at least three to one in favour of the pure rectified spirit: and in this particular his experiments contradict those of Dr Percival, who seems to doubt the superior solvent power of the rectified spirit. This, he observes, would not, *à priori*, be inferred, when it is considered that the bark, as well as many other vegetable substances, consists both of mucilaginous and resinous parts. But he thinks that the reason why proof-spirit is not a more powerful solvent than rectified, is, that the attraction exerted among the constituent parts of bodies, is weaker in proportion as they are more compounded; And thus, that the attraction between the water and spirit is so great,

great, as to weaken the attraction of the former for the mucilaginous part of the bark; and that of the latter, or spirit, for its more resinous particles.

From experiments made upon the bark with water, both in the way of infusion and decoction, Dr Skeete concludes, that heat promotes the action of water upon bark; and consequently that a decoction of it, prepared over a slow fire, is a more efficacious preparation than the cold infusion, although contrary to the opinion of Dr Percival and many others. Dr Skeete was unable to perceive that the flavour of bark is injured by boiling, provided it be conducted with care. He indeed allows that the taste of the decoction is more bitter; and therefore, perhaps, more disagreeable than the infusion: But it cannot, he observes, be expected to appear otherwise, when it is considered that an equal measure of the decoction contains a greater proportion of the active parts of the bark, as is evinced not only by its specific gravity, but also by the test of chalybeates, with which it exhibits marks of greater strength than the cold infusion.

From triturating bark with lime-water, Dr Skeete obtained a transparent infusion; and when equal parts of this infusion, and of water thoroughly impregnated with fixed air, were mixed together, no other effect took place than that which seemed to arise from dilution: For after remaining at rest a whole day, the liquor continued clear, and without the slightest appearance of precipitation. From this Dr Skeete thinks it probable, that the lime-water and bark, in such a preparation, are so chemically united, that the addition of fixed air is insufficient to produce a decomposition. This at least seems to be the case with that portion of aërial acid which is capable only of being mixed with water. But if a larger proportion of the fixed air be thrown through a quantity of the infusion from the pipe of a proper apparatus, the bark is soon obliged to part with the lime; it is rendered sensible by precipitation, and the infusion at the same time loses its rich red colour.

Dr Skeete having thus found that lime, in the small quantity in which it is dissolved in lime-water, increases the sensible properties of
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the Peruvian bark, in the form of infusion; and being fully satisfied that this is an useful remedy in particular diseases, next determined to try the effects which would be produced on the bark by a large proportion of the same substance. Two drachms of bark in powder and one drachm of lime were carefully rubbed in a mortar for the space of half an hour, with four ounces of water; and in proper time the mixture was filtered. But instead of the rich red colour which the infusion with lime-water exhibited, this infusion seemed scarcely to possess any of the properties of the bark. Thus it appears that lime, in a large proportion, united with the bark, forms a new compound, possessed of properties different from either of them in their separate condition; and from want of attention to this diversity of effects, arising from different proportions of the lime, some have, he thinks, very improperly condemned lime-water as a menstruum for bark.

After these experiments with lime, Dr Skeete next relates the trials he made to ascertain the action of magnesia upon Peruvian bark. This inquiry was suggested to him
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by Dr Lister teacher of chemistry at Guy's Hospital; and by the observations made by Bergman in his essay on magnesia, which show its power of promoting the solubility of different resinous substances in water, although he does not seem to have made any trial with Peruvian bark. Dr Skeete considers his experiments on this subject as the most interesting in which he has been engaged, and thinks they may be productive of real utility in the practice of medicine. The effects of magnesia upon the bark are, he thinks, clearly demonstrated by the following experiment. Two drachms of Peruvian bark in powder and half a drachm of calcined magnesia, were rubbed together in a mortar with four ounces of distilled water for the space of ten or fifteen minutes. The water was gradually added, so as to reduce the materials, in the first instance, to the state of a paste; and in this condition the friction was principally performed. The infusion, when passed through filtering paper, was found to be possessed of the following remarkable properties: It had an exceeding deep red colour, superior to the infusion of common bark

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in lime-water. It was more bitter and astringent to the taste than an infusion of red bark. It produced a very deep black colour, with a copious precipitation upon the addition of a solution of sal martis, while a similar addition to a common infusion of bark, occasioned a moderate discolouration, and a small precipitation only. It remained beautifully transparent for three or four days ; and was so strongly antiseptic, that at the end of a week, in summer, it had scarcely made any advances towards fermentation, while an infusion of bark, in simple water, fermented in two days. It exceeded in specific gravity the infusion of bark in lime-water, in a greater proportion than that exceeds the simple infusion.

To determine still more particularly the nature of this infusion, several additions were made to it. Water impregnated with fixed air produced no other effect than that of simple dilution ; but a small quantity of the acid of sugar immediately discharged the red colour, and caused a whitish precipitation. Hence it is obvious, he thinks, that the magnesia itself is dissolved in the mixture in a small proportion ; and as calcined magnesia,
added

added to an infusion of bark, prepared in the common way with simple water, occasions no change in its colour or properties, we may, he thinks, conclude, that when bark and magnesia are rubbed together with water in the manner before mentioned, the magnesia enables the water to extract something from the bark which it could not have done alone; or what is more probable, they form a compound more active and soluble in water than pure bark.

The calcined magnesia which Dr Skeete employed, was carefully prepared by Mr Babbington apothecary to Guy's Hospital, and had lost more than one half of its weight by calcination. After the trials he had made with it, his next object was to try the action of common magnesia, in order to determine how far the presence or absence of fixed air would assist in the explanation of the effects which have been enumerated. He found, that when allowance is made for the weight occasioned by the presence of fixed air in the common magnesia, all the effects may be obtained from it in an equal degree with the calcined. Hence he thinks

we are authorised to conclude, that fixed air is by no means concerned in the remarkable changes which take place from the action of these substances upon each other. He tried experiments with chalk and the earth of alum, similar to those which he had performed with magnesia; but by these, altho' an equal degree of triture was employed, the action of the water on the bark was rather retarded than promoted. Hence he concludes, that the effects of magnesia upon many vegetable substances, constitute a striking difference between it and the crude calcareous and agilaceous earths.

Dr Skeete next relates a number of experiments made by employing, as menstrua for bark, Jamaica rum, brandy, port-wine, vitriolic æther, dulcified spirit of sal ammoniac, caustic spirit of sal ammoniac, and by adding water to bark on which spirit had formerly acted, and spirit to bark upon which water had acted. From these experiments it appeared, that neither water nor spirit alone is capable of extracting entirely, the active parts of bark; but that they both exert such a degree of action upon it, that after
successive

ſucceſſive additions of either of them, the remaining part is much deprived of activity and ſolubility. After relating his experiments, he gives the following table ; which exhibits at one view the powers of the different menſtrua which he tried with the quilled bark :

Pure rectified ſpirit of wine extracted,	Gr. 14
Caustic ſpirit of ſal ammoniac,	- 9
Brandy,	- 7
Rum,	- 6
Dulcified ſpirit of ſal ammoniac,	- 6
Infuſion with magnesia,	- 5½
Water in decoction,	- 5½
Lime-water,	- 4½
Proof ſpirit,	- 4
Port-wine,	- 4
Mountain wine,	- 4
Renish wine,	- 4
Water in cold infuſion,	- 3½
Vitriolic æther,	ſcarcely 2

Theſe trials, he thinks, enable him, in ſome degree, to determine on the nature of the conſtituent parts of bark. It has been

Q 2 proved,

proved, that both water and spirit are capable of acting with effect upon it; and he thinks it probable, that many of the different menstrua operate according as they partake more or less of the properties of these. If therefore it be considered, that water acts upon mucilage, and not upon resin, except by the intervention of the former, and that spirit, on the contrary, dissolves resin, and scarcely affects mucilage, we are, he thinks, certainly led to conclude, that bark consists chiefly of mucilaginous and resinous parts. But any attempt to ascertain the proportions of these is, he observes, attended with so much difficulty, that he has avoided any inquiry on the subject. As a great difference must arise from the quality of the bark, all those who have endeavoured to determine this matter, have differed extremely in their accounts. He is inclined to believe, that the bitterness and astringency of the bark both reside in its resin, or are very nearly connected with it; and that the mucilage or gummy part is of a similar nature with that of gum Arabic, and many other vegetable mucilages; but so intimately combined with the resinous part, that

that it is difficult to separate them from each other.

After these experiments on the quilled bark, Dr Skeete next makes a short comparison between it and the flat pieces of bark. From different trials, he is disposed to conclude, that the preference given by many to the former is without foundation ; and that the flat pieces, if they be firm and compact, of a reddish colour, and sufficiently bitter and astringent to the taste, are as good as the quilled bark, and on many occasions preferable to it. But he concludes with observing, that this article differs so much in its appearance at different times, that an attention to the degree of bitterness and astringency discoverable by the taste should never be neglected.

The second section of this work contains an inquiry into the nature and properties of the red bark, and a comparison between it and the quilled bark. From a considerable number of experiments, of which we cannot here pretend to give any detail, Dr Skeete thinks he may draw the following conclusions :

1st, That the red bark resembles the quilled in its sensible properties, both possessing bitterness and astringency; but that these qualities are to be found in a more remarkable degree in the former than in the latter.

2^d, That by chemical trials, the red and quilled barks appear in many respects similar, most of the substances which act on the one likewise acting on the other; with this difference, that the red bark imparts a greater proportion of active and resinous parts.

3^d, That as magnesia does not produce the same remarkable effect on red as on common bark, there must be some difference in the real nature of the constituent parts, arising probably from the previous union of some unknown body with the resin of the red bark; by which it is rendered extremely active and soluble, and the desired action of magnesia upon it thoroughly excluded, in consequence of a superiority of attraction.

4th, That the preparations of the red bark are of a more antiseptic, or less fermentable nature, than those of the common or quilled bark.

He gives the following table, as exhibiting

ing the comparative action of different substances which were added to the quilled and Peruvian bark :

	Quilled Bark.	Red Bark.
Rectified spirit of wine, Gr.	14	18
Caustic spirit of sal ammoniac,	9	12
Brandy, - - - - -	7	10
Dulcified spirit of sal ammo-		
niac, - - - - -	6	8
Rum, - - - - -	6	10
Infusion with magnesia,	5 $\frac{1}{2}$	<i>No additional effect.</i>
Water in decoction, -	5 $\frac{1}{2}$	7
Lime-water, - - - -	4 $\frac{1}{2}$	5
Proof-spirit, - - - -	4	6
Port-wine, - - - - -	4	5
Water in the triturated cold		
infusion, - - - - -	3 $\frac{1}{2}$	5 $\frac{1}{2}$
Vitriolic æther, - - -	2	3

The sensible effects of the red bark, when it produces any sensible operation, are, upon the whole, very much similar to those of the quilled, only that the red produces all of them in a greater degree : and with respect to its use in diseases, Dr Skeete brings the te-

stimony of several eminent practitioners in support of its superior efficacy.

From several different considerations, Dr Skeete is led to conclude, that the red bark is obtained from a tree which may be considered as a variety of the true *cinchona officinalis* of Linnæus, probably depending on age, variety of soil; exposure, and other circumstances; and that it is the most efficacious form of it, but not a different species. He observes, that the small and even quilled pieces of red bark frequently met with, have long since induced Dr Saunders to relinquish the opinion which he at first adopted, that the difference depended on the red bark being taken from the trunk, and the quilled bark from the branches of the same tree.

In the third section of this part, the author offers some general observations on the bark. He first treats of its *modus operandi*. He considers its action as solely exerted upon the stomach; and thinks that it is with greatest propriety referred to the head of *remedia roborantia*. He then makes some observations on the different methods of exhibiting it, with the different additions which are made to it.

These

These he thinks may, with propriety, be referred to four heads or divisions; *1st*, Those which are added with a view of rendering the bark more soluble in certain menstua; *2d*, Those which are employed to obviate any inconvenient effects arising from it; *3d*, Those which are used with a view of rendering it more agreeable to the stomach; and, *lastly*, Those which more especially improve its powers as a medicine, or diversify its mode of action, so as to adapt it to particular diseases. The additions of which he chiefly treats are lime-water and magnesia: those, particularly the latter, he considers as furnishing a medicine of peculiar efficacy. And besides employing magnesia in infusion with bark, he proposes that they should be given together in substance more frequently than has hitherto been the practice. He thinks there is good ground for expecting that the bark would be rendered more efficacious by such a mode of exhibition. He concludes this part with some remarks on the pharmaceutical treatment of the bark; and after giving many judicious directions for preparing the extract, he observes, that what is called the
essential

essential salt of bark, prepared and sold by Mr Godfrey in Southampton-street, may be considered as a very delicate extract, entirely free from empyreuma. All the different tinctures of bark should, he thinks, be made either with rectified spirit of wine or with brandy.

In the second part of this work, Dr Skeete treats of the diseases in which bark is more particularly required. And here he presents us with many judicious and useful observations on its use in fevers, putrid sore throat, rheumatism, hæmorrhagies, dropfies, and a variety of other diseases. But as these in general cannot be considered as new, and as a particular detail of them would extend our analysis to an improper length, we shall conclude with giving some account of his observations on the *cinchona caribæa*, of which he treats in a short appendix.

While he considers all the varieties of bark formerly mentioned as being the *cinchona officinalis panicula brachiata*, he considers the *cinchona pedunculis unifloris* as comprehending every plant of the nature of *cinchona* produced throughout the West Indies, although the species may admit of great variety. For
several

several years, he observes, we were acquainted only with the bark of the island of Jamaica, accurately described by Dr Wright in the *Philosophical Transactions* for the year 1777. Dr Skeete tells us, that in the specimens of this bark which he has had an opportunity of examining, he has only been able to perceive an extremely bitter, sweetish, and nauseous taste, residing more particularly in the internal lamina, the external layer or covering being nearly insipid. When reduced to powder, it resembled in colour and appearance the common Peruvian bark; and it freely yielded its properties both to cold and boiling water. The colour of the infusion, however, was much deeper than that of the quilled bark, and extremely bitter; but both from the taste and from the addition of a chalybeate solution, it appeared to possess but little astringency. He thinks it, however, a remedy of great efficacy; and in situations where neither the red nor common Peruvian bark can be had of genuine quality or in sufficient quantity, he thinks that if the Jamaica bark can be procured, it promises to be the most effectual substitute we can employ.

He next describes the St Lucia bark, pointing out the circumstances in which it chiefly differs from that of Jamaica. The colour of some of it which Dr Skeete reduced to powder was of a lighter red than that of the red bark. But the colour, he observes, varies considerably in different parcels, being remarkably influenced by the age of the trees, the soil, and other causes. Some pieces of it are flat, thick, and reddish ; others thin, pale, and rolled up in quills. It possesses, he observes, an emetic quality not common to the true bark ; it breaks more woody and splintery, and is far more nauseous to the taste, the extract resembling more the bitter of gentian than of Peruvian bark. It agrees in many respects with the Jamaica bark, particularly in being disagreeably bitter, and in having a sweetish disagreeable taste ; but its emetic property, which the Jamaica bark does not possess, establishes a striking difference.

While the bitterness of the St Lucia bark is of a different kind from that of the officinal Peruvian bark, Dr Skeete was not able to discover its astringency by the taste ; and in precipitation with chalybeate solutions, the marks
of

of astringency were but inconsiderable, when compared with those exhibited by the red bark. The colour, as well as the bitterness, of the St Lucia bark, is readily yielded to warm water; for a pint of boiling water poured upon an ounce of the powder, becomes instantly of a deep brown or reddish colour, and is, if possible, still more bitter than the cold infusion.

On the authority of Mr Wilson of London, Dr Skeete mentions another curious circumstance respecting the chemical nature of this bark; its containing, viz. a considerable proportion of a deep green oil, very acrid and bitter to the taste, which is to be obtained by pressure from a spirituous extract of it. This oil Mr Wilson found to be very active, a single drop having occasioned a tedious and intolerable sickness. And from different considerations he is led to conclude, that the emetic quality of the St Lucia bark is resident in this green oil; and that if it could be entirely separated, the pure resin would almost, if not altogether, lose that effect.

Dr Skeete and Mr Babington made some attempts to obtain this oil from a few ounces
of

of the spirituous tincture of St Lucia bark evaporated to a pilular consistence, but without effect. And they found that the St Lucia bark in distillation with water yielded nothing of an oily nature. Dr Skeete therefore thinks, that if the green oil mentioned above, does really exist in this kind of bark, and be not produced in consequence of any decomposition or alteration in the resin by too great a degree of heat, it will form a remarkable exception to vegetables in general; for he believes there is scarcely an instance of an oil being thus procured, most of the essential oils being separated in distillation with water.

Of this green oil Dr Skeete received a small quantity from Mr Wilfon; and he found it possessed of very curious properties. It was perfectly inflammable, lighter than water, and had not the smallest tendency to unite with it. In rectified spirit it was instantly and completely dissolved, and imparted to it a greenish colour. A few drops of it exposed to heat in a tea-spoon discharged an offensive smoke or vapour, till at length a small portion of a fixed blackish substance remained

ed behind, not completely soluble in spirit, and requiring the assistance of heat before any solution at all appeared to take place. The smell was remarkably empyreumatic, and the taste of the same kind, joined to a most disagreeable bitter.

With respect to the medical properties of this bark, Dr Skeete speaks only on the authority of others. He observes, that when first tried in the island from which it receives its name, by Dr Young and Mr Davidson, its strong emetic and purgative qualities prevented its exhibition: but that the best success had been afterwards experienced from some of it, which had been kept a long time, and was sufficiently dried. It was employed chiefly under the form of infusion with lime-water or simple water, in the proportion of an ounce to three pints. It was given in substance from twenty to thirty grains for a dose; but never exceeding the latter quantity, as it was found that the stomach would seldom retain more than twenty grains. But he observes, that in different trials of this bark which he is informed have been made in Britain, it has not done so much as was expected.

pected from the account given of its having cured intermittents at St Lucia, after the common Peruvian bark had failed. Dr Skeete concludes this treatise with recommending the red bark as in many respects preferable to any other kind yet employed in practice: And in this opinion, as far as our own experience goes, we are readily disposed to join him. At one time the scarcity of this bark led in several instances to the most flagrant abuses, other kinds of bark being substituted in its place, and made to resemble it by different colouring materials. The high price of it also was at one time much against its use. But it is to be hoped, from the late importations which have taken place, and from the additional quantities which may soon be expected, that the shops will soon be abundantly supplied with it on reasonable terms. And while the treatise before us has no inconsiderable share of merit, as having thrown much light on its natural, chemical, and pharmaceutical history, it also furnishes additional evidence of its efficacy, and contains many useful observations on its employment in different diseases.

XV.

Experiments on the Red and Quilled Peruvian Bark ; with Observations on its History, Mode of Operation, and Uses ; and on some other Subjects connected with the Phænomena and Doctrines of Vegetable Astringents : Being a Dissertation which gained the first Prize given by the Harveian Society of Edinburgh for the Year 1783. By Ralph Irving, M. D. 8vo, Edinburgh.

THIS ingenious experimental essay, as well as that of which we have last given an analysis, owes its origin to the question respecting the Peruvian bark, proposed by the Harveian Society of Edinburgh : And it was rewarded by the highest mark of distinction which they bestow. While the former treatise has, before its publication, been augmented and improved by many additional experiments and observations, this is present-

ed to the public nearly in the state in which it was first subjected to the examination of the society.

In an introduction to his experiments, Dr Irving presents us with several observations on the natural history of the Peruvian bark ; on the names by which it was known among the natives of America ; and on the period of its discovery to the Europeans. He does not pretend to determine whether the red bark be the product of the same species of tree with that which produces the quill bark ; but he differs from Dr Saunders, who has lately turned the attention of medical practitioners to the former of these articles, and who supposes that the red bark was that used in the days of Sydenham and Morton. He observes, that no very accurate description of the bark is to be met with in the works of Sydenham ; but he thinks nothing more clear than that Morton used and preferred the thin quilled bark : and he contends, that the success ascribed to this remedy by these authors is not more remarkable than we ourselves daily experience from the employment of the quill bark in common use. He concludes his

his introduction by pointing out the marks of good and genuine bark, which he thinks are most distinctly obvious in the red bark of Dr Saunders. And he thinks the goodness of every other kind may be estimated as it approaches more or less to the appearance of the red bark.

The three first experiments which Dr Irving relates, serve to prove, that the middle layer of the bark crumbles down first in the operation of pounding, and that the powder which passes through the sieve first is the strongest. In the fourth experiment, six ounces of the powder of quill bark were macerated in a gallon of soft water. After this a quart of distilled water was drawn off from it by a brisk heat. The water had sensibly the smell, but a very faint taste, of the bark. On its surface was a thin pellicle, which, when examined by a microscope, was found to contain minute globules of a spangling hue inviscated in a peculiar substance. These spangling particles Dr Irving thinks were undoubtedly essential oil. This essential oil, however, it appears, either exists in very small quantity in the bark, or is so intimately com-

bined with the other principles, that it is difficultly detached. The distilled water struck no black colour with a solution of martial vitriol. From this experiment it appears that the bark must lose much of its aroma by boiling, and that the principle of astringency in this substance is in a pretty fixed state.

The seven following experiments exhibit the effect of alkalis both fixed and volatile, and of lime-water when added to a decoction of bark. Upon these additions being made, a deposition more or less copious took place; from which Dr Irving concludes, that it is improper to join these substances to decoctions of bark; and that the object proposed by doing so, of making the medicine more powerful, or of correcting some of its supposed bad qualities, will not be obtained.

The series of experiments which next follows was instituted to try still farther the effects of lime-water, when added to the infusion and decoction of bark. From these experiments he infers, that lime-water is a very improper menstruum for the bark; that boiling effects that change in bark which is always the more perfect consequence of age; and

and that the decoction contains considerably less fixed air than the infusion, but in a more loose and detached state. It appeared that lime-water in a small quantity is able to precipitate the gummy parts of the bark; yet when applied in such a manner that a repetition of its force shall compensate for its weakness, it is even capable of dissolving the same matter it before deposited.

Lime-water, at least in the way Dr Irving employed it, had no obvious effect on the resinous depomite from decoctions and infusions of bark. After it had precipitated the gummy matter from the old decoction, the clear liquor imparted a sensible roughness on the tongue. From these facts he infers, contrary to the assertion of Dr Lewis, that the decoction of bark does really contain resin, and that water is capable of suspending this resinous matter less dependent on the intervention of the gum than has been supposed. In prosecuting this inquiry farther, he found that, a mixture of lime-water with a decoction or infusion of bark, upon standing for some time, loses all taste of lime-water. This he found to be the case sooner with the decoction than

the infusion ; and the infusion rendered a greater quantity of lime-water insipid than the decoction did. From this he infers, that the infusion contains more fixed air than the decoction ; that it is less perishable ; and that the active principles of the bark are extracted in a more undecomposed state by infusion in cold water than in boiling water.

Decoctions and infusions of the red bark were subjected to similar trials with lime-water. From the result, it appeared that they were less perishable than those of the pale ; that they furnish not only a greater quantity of fixed air, but also a more copious deposition of the extractive matter of the bark. From these experiments, Dr Irving conjectures that lime-water may be employed as a test of the strength and goodness of decoctions and infusions of bark.

The addition of a solution of martial vitriol to the decoction and infusion of bark also proves a test of the goodness of these preparations. When they are newly made, a purple colour is slowly produced in them, particularly in the infusion ; but upon standing it becomes darker. When the chalybeate

beate was added to an infusion of four days old, the purple colour was produced much more suddenly; but it did not become darker upon standing. The decoction of the same age instantly struck with the chalybeate a greenish colour. An infusion of eight days old gave a beautiful green colour with the chalybeate. The decoction also gave a green colour, but considerably lighter. The infusion and decoction of the red bark gave a darker colour with the chalybeate than those of the pale; and both of them were older before they gave the green colour.

From these experiments, Dr Irving concludes, that the preparations of the red bark are not only stronger than those of the pale bark, but are also much less perishable. For the more suddenly any preparation of bark strikes a colour with chalybeates, we may, he thinks, be thereby assured that the preparation is more in a fermenting state. If the colour be purple, the fermentation has not yet advanced far; if it be of a dark green, the fermentation has advanced a little farther; and if again the green be of a lighter hue, it is still farther advanced. But if no

colour be produced, which by the by Dr Irving never knew to take place, he would suppose that a total evolution of the gas producing the colour had already taken place.

In some subsequent experiments, Dr Irving follows the steps of Dr Percival. He found that decoctions made from the residua of former decoctions and infusions were of equal strength, though he suspects that the original decoction was not so strong as the infusion. He infers, that in both residua as much resin remained as boiling water was able to suspend. In proof of this, he found that an infusion of the residuum of the decoction was stronger than a decoction of the same residuum; and that an infusion of the residuum of the first infusion was stronger than a decoction of the same residuum. This he accounts for from supposing that boiling is able to destroy the astringency of the bark entirely, and that it always impairs it more or less. Hence he concludes, that the cold infusion of bark is in many respects preferable to the decoction. He infers, that the practice of throwing away the residua of infusions and decoctions is profusion; as they may be applied

applied to very useful purposes, more especially in the making of tinctures.

He found that the triturated infusion of the bark always let fall a quantity of sediment. The suspension of the bark, therefore, in this way, is not complete. But even after this deposition, the infusion is stronger than when made without triture, particularly in the bitter and astringent parts. The aromatic part seems to suffer in this preparation; for during the triture a strong smell of bark is diffused in the circumambient air. Dr Percival thinks that a decoction of the residuum of a triturated infusion is sensibly weaker than a decoction of the residuum of the plain infusion. But our author is not of this opinion. The result of other experiments led him to conclude, that triture suspends the bark in water much in the form of emulsion; that the resin is dissolved in an infusion of bark; and that boiling renders the same resin incapable of farther solution.

After twenty-two separate infusions of an ounce of bark in water, each infusion standing twelve hours, excepting the first, which was allowed to stand for three days, the last infusion

infusion afforded the water clear and tasteless. The residuum was of considerably less bulk than the original powder, and was gritty and filamentous to the look and feel. Two drachms of it were infused in an ounce of rectified spirit; which after forty-eight hours acquired a pale colour, and its taste was considerably bitter, but without sensible astringency. The remaining residuum was boiled in twelve ounces of water; a very slight yellowish colour was perceived, and after straining, it let fall a small quantity of a blackish powder; the liquor then became clear and tasteless. This powder had much the appearance of resin, but did not impart any sensible roughness to the tongue.

It may, he observes, appear extraordinary, that twenty-two effusions of water should have exhausted the strength of his bark, when it required thirty such, and these continued for three days each, to exhaust that employed by Dr Percival. He is led to think that this may have in part arisen from Dr Percival's bark having been stronger than the pale bark which he employed, and in part from the length of time for which each infusion

was

was continued. For Dr Irving imagines that the water, after a certain time, deposits again part of the bark which it had previously dissolved. Hence the impropriety of allowing bark to stand long in infusion. This experiment, he thinks, renders it probable that resin is soluble in water without the intervention of gum. But he imagines that boiling water does not suspend resin as a solvent; but effects what may be called a temporary fusion of it. And he thinks that the experiment of the spirituous infusion proves, that all the useful parts of bark are not to be extracted by water alone.

Dr Irving next proceeded to try the effects of repeated coctions. The residuum of a decoction was boiled repeatedly in fresh parcels of water. After thirteen coctions the liquor came off clear and tasteless. The tincture made from this residuum was considerably weaker than that made from the residuum after repeated infusion. From this he infers, that repeated coctions are capable of melting out part, or perhaps the whole, of the resin of the bark; and that long boiling may entirely decompose the principles, and more especially
the

the refinous part of the bark. To prove this, he added two ounces of lime-water to four ounces of a decoction of bark, formed by long continued boiling; which had a faint bitter taste, accompanied with a kind of disagreeable harshness, and from which a black and tasteless deposit had been made. A slight turbescence took place with some little precipitation. But the mixture, after being kept for ten days, still retained the taste of lime-water. To two drachms of the residuum of this decoction an ounce of rectified spirit of wine was added. The infusion gained some little colour without any sensible taste. From these experiments, he thinks we may infer, that the watery extract of bark does not contain those principles that are soluble in water in their natural state and integrity.

The affusion of rectified spirit on bark was repeated six times at the interval of forty-eight hours. The residuum communicated to cold water a considerable astringency. From this Dr Irving concludes, that the properties of bark are not to be extracted by water or rectified spirit separately employed; but that a combination

combination of the two is the most complete menstruum of this substance.

The experiments which next follow were made to determine the powers of different solvents of the bark, and the relative degree of solubility of the pale and of the red bark. So far as the comparison is made, it appears that the red bark is more soluble, and of course that the infusions of it are stronger than those of the pale bark. Dr Irving observes, that the addition of tincture of bark to infusions already made, is bad pharmacy. He thinks it much better to add the spirit to the water on the commencement of the infusion; and when an aromatic is to be added, it will be best done by joining a spirituous or simple aromatic water with the menstruum.

The solubility of the resin of bark in different menstrua was our author's next object of attention: He put equal quantities of it into the following liquors, and found their solvent powers to stand in the order of the list subjoined.

Dulcified spirit of sal ammoniac.

Caustic volatile alkali.

Caustic

Caustic fixed alkali.

Dulcified spirit of vitriol.

Dulcified spirit of nitre.

Rectified spirit of wine.

Proof spirit.

Water.

Lime-water.

He does not, however, conclude, that those highest in the list are the best menstrua for entire bark: but he thinks that the dulcified spirit of vitriol, in the proportion of one part to six parts of water, is an excellent assistant in preparing the cold infusion of bark.

To ascertain the effect of the resinous deposit of the bark on the living body, a tea spoonful of that matter obtained from the caput mortuum of a second distillation was given to a man who had been taking bark for three days before. In about two hours after it was taken, it produced gripes and several loose stools. From this it appears that the purgative quality of the bark is seated in the resin.

Dr Percival has supposed a particular affinity to subsist between acids, astringents, and bitters, and that they mutually neutralize

each other. Dr Irving, from his experiments, is inclined to controvert this conclusion; but while he gives it as his opinion that Dr Percival's experiments do not prove such an union, he admits that his own experiments do not fully prove the contrary. He agrees in opinion with Dr Percival, when he contends, that acids and bitters combined possess double the sum of the antiseptic powers which they have when separately employed. And his trials on this subject not only confirm Dr Percival's opinion, but also prove the superior antiseptic power of the red bark. But in opposition to Dr Percival's experiments, he found that watery preparations of bark tend more or less to preserve ox-gall, and that they are incapable of coagulating it.

In conducting these experiments, an analogy between the effects of a fermenting infusion and those of yeast, struck the author, and led him to think, that an artificial yeast might be discovered. He made some experiments towards an inquiry of this kind, but without effect. What he found to resemble yeast most nearly was, an infusion of the heads of white poppies, mixed with the yolk
of

of an egg, and the whole slowly impregnated with fixed air.

To determine the astringent power of bark, Dr Irving instituted some experiments with human hair; and after many difficulties and disappointments, he contrived an instrument, of which he gives a description and sketch, and which seems to be ingeniously fitted for ascertaining the degree of contraction which took place. From those experiments he found, that the astringent power of an infusion of bark, with a proportion of vitriolic acid, was greater than that of the simple infusion; and that the astringency of this last was greater than that of the acid diluted with water. He next endeavoured to determine by experiments the effects of a mixture of bark and vinegar on dead animal matters. Though he could not here arrive at great accuracy, yet he thinks it is rendered at least probable, that the astringency of the bark is not diminished by vinegar, further than an admixture of that acid is a counterpoise to the constringing powers of the bark. And as it appears that vinegar precipitates the matter of the
2 bark,

bark, it is not, he thinks, probable, that the two form any neutral union.

As Dr Irving had repeatedly observed that infusions and decoctions of bark produced more or less of a dark colour with chalybeates, in proportion to the age and state of those preparations, this naturally turned his attention to the production of ink; and the remaining experiments relate to that subject. A pretty deep-coloured ink was made with an infusion of red bark and a chalybeate. The clear colour was regenerated by means of vitriolic acid; but when the acid was afterwards supersaturated by the oleum tartari per deliquium, the colour became considerably blacker than that of the original ink. The result was the same when common magnesia and plain chalk were used in place of the oleum tartar. When the acid was saturated with fixed caustic alkali, with calcined magnesia, and with chalk in a state of quick lime, the reproduced colour was fainter than that of the original ink. From this Dr Irving infers, that fixed air is an essential constituent in the production of ink; but he supposes that this air is only necessary as it is

subservient to the deposition of phlogistic matter in a particular state and form.

After relating his experiments, Dr Irving subjoins some thoughts on the mode of operation of the Peruvian bark. Here he presents us with a concise view of the different opinions entertained by the most eminent physicians respecting the operation of bark, from the days of Dr Sydenham to the present time. On this subject he is inclined to adopt the opinion of those who suppose that the effects of the Peruvian bark do not arise from its operating on the fluids, and that they must therefore depend on its operating on the nerves of the stomach, its effects being thereby communicated to the rest of the nervous system; and that its operation depends upon a tonic power. He thinks it even obvious, that its antiseptic power is an effect of its tonic power only. In this opinion we must own that we cannot altogether adopt his sentiments. For although when employed as a remedy in cases of disease, it may with sufficient propriety be arranged among the antiseptica tonica, as exerting on the living body both an antiseptic and tonic power; yet the

the effect which it unquestionably has, of resisting putrefaction in dead animal matters, even in fluids, can never surely be attributed to its tonic power: and it is but reasonable to suppose that its action, as an antiseptic in the living body, is at least, in some degree, on the same principles on which it resists putrefaction in animal matters when in a dead state.

This treatise is concluded with some observations on the use of bark in particular diseases; but as most of these, though judicious and important, are selected from other authors, we reckon it less necessary to lengthen out this analysis, by giving any account of them. And, indeed, it is but proper to observe, that as the nature of an experimental inquiry makes it very difficult to give a concise, and at the same time an accurate analysis of what it contains, we have found it necessary, without giving a detail of the experiments, merely to state the conclusions he draws from them. This we are satisfied must, on many occasions, be unsatisfactory, particularly to those not acquainted with the experiments formerly made respecting the bark.

But as a more accurate and minute detail would necessarily have exceeded due bounds, we must refer to the original work such of our readers as wish for fuller information on many curious and interesting particulars, which have suggested themselves to our ingenious author in the course of this inquiry, and of which he has treated with uncommon ability.

XVI.

Experiments and Observations on a New Species of Bark, showing its great Efficacy in very small Doses ; also a Comparative View of the Powers of the Red and Quilled Bark ; being an Attempt towards a General Analysis and Compendious History of the Valuable Genus of Cinchona or the Peruvian Bark. By Richard Kentish, M. D. Member of the Royal Medical Society of Edinburgh, Correspondent Member of the Society of Scottish Antiquaries, &c. 8vo, London.

IN the two preceding articles, we have given an analysis of experimental essays, which have brought to light several curious and interesting particulars respecting the Peruvian bark : But notwithstanding what has been done, the subject cannot yet be considered as by any means exhausted ; and in

the treatise now before us, the ingenious author has brought to light many particulars well deserving attention ; especially with respect to that new species of bark commonly known by the title of *Cinchona Sanctae Luciae*, and lately introduced into practice.

After a short general history of the Peruvian bark, and some observations on its botanical arrangement, Dr Kentish, in his second chapter, gives a particular detail of twenty-four experiments which he performed with the *cinchona officinalis*. From these experiments, he concludes, that this article is a powerful astringent ; that its astringency resides in a gum which is soluble in water, and more readily by cold maceration than coction ; that it contains a bitter principle, which is a resin ; that the astringent gum and bitter resin are so combined, that by the assistance of the former, part of the latter is suspended in water even by cold maceration ; that coction extracts powerfully the resin, although it evaporates or diminishes the astringent principle ; that proof-spirit dissolves both the astringent and bitter principles, and is the only proper menstruum of the latter ; that
vinous

vinous spirit has the same effect as proof spirit, although in a less degree ; that concentrated mineral acids entirely corrode or dissolve the bark ; but that the weaker have little effect on its substance, and when added to its solutions in water or spirit, precipitate its active parts ; that common alkalies prevent its solution in other menstrua ; that volatile alkali does not extract its virtues, while the caustic volatile alkali forms but a weak preparation ; and, lastly, that it is a powerful antiseptic.

In the second section, Dr Kentish treats of the cortex ruber, or red Peruvian bark. He introduces his remarks by some observations on the history of this bark, and on its recommendation to the attention of practitioners by Dr Saunders of Guy's Hospital ; and he is inclined to adopt the opinion of those who consider it as being a different species of the cinchona from that which yields the pale quilled bark. He next relates twenty-four experiments which he performed with this article. From these he concludes, that there is a very great analogy between the two, both of them being astringent, bitter, and antiseptic ; but, upon comparison, it appeared

that the pale bark manifested greater signs of astringency, and yielded more watery or gummy extract; whilst the red species abounded more in resin, and yielded a more copious spirituous extract. The exact quantity which each species yields per pound, must, he observes, vary according to the quality of different parcels: But in that which he examined, he found that four pounds of red bark yielded twelve ounces of spirituous extract, while the same quantity of quilled bark yielded only eight ounces. He found that a pound of quilled bark yielded five ounces, and near three drams of watery extract; while the same quantity of red bark yielded only five ounces and half a dram. From these conclusions he draws some practical inferences respecting the medical effects of the red bark. He allows, that in some instances it may be preferable to the quilled, although not as Dr Saunders supposes, from its superior astringency; but rather on account of its bitterness. In what cases this may give it the preference, is not, he thinks, easy to determine. There are agues, he observes, which astringents alone, as alum, effectually

fectually cure; there are others, in which bitters alone, as camomile flowers, absinthium, or gentian, are the sole remedies; in others again, and these most frequent, the conjunction of these principles is necessary. From this then he infers, that *à priori*, at least the universal superiority of the red bark is not to be admitted. And in support of this deduction, he mentions the authority of several respectable practitioners, who have found it to fail where the pale bark succeeded.

In the succeeding section Dr Kentish treats of another species of bark; that which has been known by the names of the Cinchona Sanctae Luciae, Quinquina Piton, Quinquina de la Martinique, Carribean, or New Bark. After some remarks on the history of this bark, and on its botanical description and character, he relates twenty-four experiments which were made with it also. From these he concludes, that it is a most powerful astringent; that it is an excessive bitter; and that it is antiseptic. On comparison, he found its astringency and bitterness greatly superior to the other species of the bark; and as these

are the only active principles to be detected in the cinchona, he thinks we may conclude this species to be possessed of the virtues of the other in a concentrated form. As an antiseptic, however, he considers this bark as inferior to the common bark, although superior to the red kind.

Having from experiment acquired some knowledge of the constituent parts of this new species of bark, he next proceeds to treat of its effects in medicine. Taking it for granted that the St Lucia bark is the same with that described by M. Mallet of the Faculty of Medicine at Paris, he gives an account of the successful employment of it by this practitioner in the French West India islands. The result of Mr Mallet's experience was, that this species of the quinquina, taken in decoction prepared by two drams to an English pint of water, and in the dose of one dram, or even half a dram, in the form of bolus, is emetic and cathartic; that it cures recent intermittents, and suspends those which have for a long time resisted the action of common Peruvian bark; that its action is very quick; and, lastly, that the property

property which it possesses of vomiting and purging, is an advantage which ought to give it the preference to the common bark, since it unites the faculty of evacuating the sick and producing a cure of the fever. Dr Kentish next observes, that in some of the London hospitals, this species of bark was found to cure intermittents and obstinate complaints in doses of a scruple. But as even that dose often proved emetic, the medicine was frequently laid aside too soon.

After giving this account of the practice of others, Dr Kentish next presents us with the result of his own experience. He has had an opportunity of making several fair trials with it; and he was at first, like other practitioners, under some embarrassment, occasioned by its proving emetic in smaller doses than he expected. But he now finds, that doses of five, eight, or ten grains, repeated at short intervals, produce all the good effects of the largest dose of common or red bark. He has found that a few grains of canella alba make it sit easily on the stomach, in the form of powder or bolus: and when it is to be used under the form of infusion, he tells us

that one dram, or in some cases half that quantity, infused for twelve hours in a pint of water, is sufficiently strong. A draught composed of one ounce of this cold infusion with two drams of the spirituous tincture, and a few drops of the tinctura thebaica, produces the best effects.

In three quartans which had withstood the use of the common and red bark for three months, eight grains of this medicine, conjoined with five grains of canella alba, taken three times a-day, beginning immediately after a fit, and repeating the dose every two hours on the morning of the day on which the fit was expected, entirely prevented it. In four cases of tertians, which had continued for several weeks, and two of which had resisted bark, bitters, and alum, in large doses, the cinchona Sanctæ Luciae produced speedy cures. But the most surprising instance of its success which Dr Kentish met with was in a case of dyspepsia or disorder of the stomach. The symptoms of the disease were complicated; and with a great variety of stomach ailments the patient was supposed to labour under a diseased liver. After trying many medicines

dicines without effect, his case was thought incurable. In this situation he was ordered a slight infusion of the St Lucia bark; of which he took an ounce, with two drachms of the spirituous tincture, twice a-day. Under this medicine his disease soon took a favourable turn; and in the course of ten days he recovered his appetite and strength to the great surprise of his friends. And by the assistance of gentle exercise and proper diet, he was so well recovered in three weeks as to be able to undertake a journey to a considerable distance. From these and several other cases, some of which Dr Kentish has related at full length, he is led to entertain the most favourable opinion of its efficacy in small doses. If the experience of others shall fully confirm Dr Kentish's observations, the St Lucia bark will constitute a most important article of the materia medica: And from many different considerations, it well deserves attention. For our part, we must acknowledge, that we have not had an opportunity of making many trials of this article. But in some cases, we have had an opportunity of using both the *cinchona Jamaicensis* described by Dr Wright,

Wright, and likewise that bark brought from St Lucia. From these trials we were led to conclude, that as an easy and effectual remedy for intermittents, it is inferior not only to the red but even to the pale Peruvian bark. It is, however, not impossible that other parcels of it may be more efficacious. And we shall be sincerely happy to speak more favourably of it from future experience.

In the fourth and last section of this work, Dr Kentish presents us with some general observations on the bark. After some remarks on its preparations, particularly those introduced into the pharmacopœias of the London and Edinburgh colleges, he next offers his opinion respecting its mode of action. His opinion is, that the good effects derived from the bark are entirely to be attributed to its stimulating power. Without entering into the arguments by which he supports this opinion, we shall only observe, that to us it seems to be totally irreconcilable to an almost infinite number of obvious and undeniable facts. How many stimuli are there both of the chemical and mechanical kind, which evidently act in stimulating animal systems,

systems, not only more powerfully but also more permanently than the Peruvian bark? But from these we would in vain look for those good effects which may be derived from the bark. If the doctrine here contended for were well founded, we might expect to cure every intermittent, and indeed most other fevers, by the application of heat alone. But while this theory would lead us to expect a cure, experience assures us that it is productive of the worst effects. And due attention to the influence of heat on the human system, is, we apprehend, sufficient to convince any impartial observer, that every stimulant is not a tonic.

Dr Kentish concludes this treatise with some general observations respecting the use of bark in particular diseases. There he differs much less from other practitioners in the practice he recommends than in the principles on which he attempts to explain it. And whether his opinion respecting its mode of action will lead to its being employed with success in apoplexy, palsy, and other diseases in which stimulants are indicated, but in which physicians have not hitherto found it

it productive of any material benefit, is, we must own, with us a matter of great doubt. We are even inclined to think, that if practitioners had speculated less concerning its mode of action, we might at this hour have been possessed of a greater number of important facts respecting its successful employment in disease. And even of those theories which have led to the advantageous extension of its use, there are not a few which are now very generally supposed to be erroneous.

XVII.

Mémoire sur le Scorbut, pour l'usage des Chirurgiens de l'Armée et de la Flotte Impériale Russe. Traduit de l'Allemand sur l'Original du Docteur Henri Bacheracht, Conseiller de College et premier Medecin de la Flotte Impériale. 12mo, Reval.

IN the dedication prefixed to this treatise, which is addressed to the Empress of Russia, we are informed, that about the beginning of the year 1786 the scurvy prevailed both at Petersburg and Cronstadt in a very fatal manner, and even in such a degree as to demand the particular attention of government; and that the salutary orders which were issued in consequence of this had the effect of snatching from death a great number of those unfortunately affected with it, and of restoring them to life and to health.

The happy success resulting from these orders determined Dr Bacheracht, physician to the fleet, to publish this dissertation on the scurvy for the use of the surgeons of the fleet and army : and to render it more extensively useful, it was very soon after translated into French by Mr Louis Desbout, surgeon to the admiralty of the Empress of Russia. From this translation we shall here present our readers with an analysis of Dr Bacheracht's work.

He sets out with observing, that while the scurvy is a disease depending on obvious causes, it is neither in itself dangerous nor contagious, nor hereditary. He considers it as being precisely the same disease in all parts of the world, whether at sea or on shore ; though the diversity of its symptoms, its different aspects and complications, have led authors into errors both with respect to its division and treatment. The only division of which he thinks it is properly susceptible is, into endemic, epidemic, and sporadic. The situation of the place, the nature of the climate, and the mode of life, produce the first of these ; which is as it were indigenous in cer-
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tain situations. The epidemic scurvy is that which at any particular place and season attacks great numbers at once, and which ceases only when the circumstances producing it give rise to others less favourable to the propagation of the disease. And the sporadic scurvy is that which at all times and in every situation attacks one or a few individuals.

In treating of the causes of scurvy, he represents exposure to humidity as being the principal circumstance which disposes the body to become scorbutic. But by itself it will not, he tells, produce scurvy, unless other secondary causes concur to give activity to the effects which it produces. What he considers as the principal occasional causes, are, a long and cold winter, aliments of a bad quality, excessive and long continued fatigue, the want of proper cloathing, ill constructed lodgings, and the excessive use of spirituous liquors. These occasional and predisponent causes produce, he thinks, in the body a certain vitiated disposition, which may be called the scorbutic cachexia, and which may equally take place at sea or on shore.

Due attention to the causes which have

been mentioned will, he thinks, sufficiently point out why the scurvy reigns more frequently and is more easily produced at sea than on shore. And it is there, he observes, more malignant; chiefly for the following reasons: Because it is often impossible to procure defence against the cold and humidity which often prevail; because the articles of diet cannot be kept for a very long time in a sound condition; because fatigue enervating the body is often unavoidable; because the necessary rest is often not to be procured; and because the remedies to be employed against the disease are often either altered in their quality or deficient in quantity.

After treating of the causes, our author next proceeds to enumerate the diagnostic symptoms of scurvy: and in doing this he gives a very full and accurate history of the disease. But the symptoms he mentions are merely what have before been often taken notice of by other writers. He represents it as a circumstance worthy of remark, that scorbutics, even in the most inveterate state of the affection, do not lose their appetite; which he asserts fails only when the nature
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of the disease is essentially changed by the addition of fever. The greatest part of scorbutics have rather a voracious appetite; and the pulse either continues natural or is slower. He remarks, that as soon as any one is attacked with scurvy, all the external injuries he had before suffered are again felt with their former severity; that the slightest contusions, wounds, or ulcers, happening to a scorbutic, are converted into ulcers of as bad a nature, and as difficult to cure, as those which succeed the excessive use of mercury; that a scorbutic ulcer never affords well-conditioned pus, but only an acrid bloody sanies; that during the course of an epidemic scurvy, all the common diseases, as fevers, exanthemata, and dysentery, are united with the scurvy in such a manner as to give a very dangerous complication; that sometimes the strength of scorbutic patients is so reduced, that on the least motion fainting ensues; that they are often subjected to very considerable hæmorrhagies from the nose, stomach, gums, &c.; that the gums often become insensible and even fall off in considerable portions; that one of the most distressing symptoms is

the occurrence of salivation, whether happening spontaneously or in consequence of the imprudent use of mercury ; and that the condition of the weather has a remarkable and singular influence on scurvy.

Dr Bacheracht next proceeds to treat of the means of prevention. There are, he observes, few diseases which can be more easily prevented, provided the attempt be made at a sufficiently early period, and prosecuted with zeal and prudence. As far as the causes which tend to induce it can be removed, particular attention must be bestowed on this subject. Dry and serene air, a diet composed of animal food and fresh vegetables, good and uncorrupted drink, moderate labour, rest during the night proportioned to the work of the day, sufficient defence against cold, change of cloaths, spacious and well-aired lodgings, and the moderate and prudent use of spirituous liquors, are, he thinks, the true means of prevention, and will even restrain the progress of this destructive disease when it has distinctly occurred. Where moisture prevails, the best way of counteracting it is by lighting fires, and by affording change of apparel. He

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considers it as a very dangerous error to send patients affected with but a slight degree of scurvy to a general hospital; because there scorbutics are very apt to be confounded with other diseases, to be improperly treated, and to catch new diseases much more essentially dangerous than the first. But of all the means of prevention, good regimen, as referable to the different heads already mentioned, is, he tells us, to be considered as by much the most powerful; and when this can be obtained, and is strictly observed, very few, and these very simple, remedies are, he asserts, necessary. A gentle perspiration, however, is, he thinks, of very great consequence, and nothing is to be neglected that can induce it; for this purpose he recommends the use of the vapour bath. To patients when first coming under his care, he orders an emetic or purgative, according to the indications which present themselves. As a purgative, he advises a mixture of rhubarb with cream of tartar; and as an emetic, a mixture of rhubarb with ipecacuanha. For promoting a gentle diaphoresis during the night, he directs that the patients should take at bed-time

a beer-glass full of a liquor prepared by boiling in a pound of water three drams of mustard and an ounce of honey. This remedy, although simple, procures, he tells us, a gentle perspiration during the night; upon the termination of which in the morning they find themselves very much relieved.

In the fifth and last section of this work, Dr Bacheracht treats of the cure of scorbutics. The course of this disease from its commencement to its greatest degree of malignity ought, he thinks, to be divided into three periods; in each of which the disease, he tells us, is characterized by obvious changes. And he contends, that a general or uniform treatment is by no means suited to all these. In the first period, he observes, all the signs indicate a thickened and viscid state of the fluids, with a loss of tone and elasticity in the solids. In the second stage, the fluids, he tells us, become attenuated, dissolved, and acrimonious, with a certain degree of putridity; and the solids fall into a state of atony. In the third period, these symptoms arrive at a still higher degree of malignity; the fluids
become

become absolutely putrid, and from their caustic acrimony, irritate and corrode the parts so as to give rise to extravasations, hæmorrhagies, putrid fever, dysentery, and the like.

In the treatment of the first period, regard must be paid not only to the state of the fluids, but also of the solids. The fluids are, he thinks, then to be restored to their natural condition, by those antiscorbutic remedies which are capable of attenuating, of pushing heterogeneous matters to the emunctories, and finally, of evacuating them by urine, by stool, or by the surface. For this purpose he strenuously recommends that treatment directed with the view of preventing the disease. But if this be not attended with the desired effect, he recommends as attenuants and incisives, water-creffes, horse-radish, mustard, onions, and garlic; and he advises as diaphoretics, serpentaria, contrayerva, sassafras, guaiac, &c. He advises as diuretics, cream of tartar, sal polychest, &c.; as purgatives, tamarinds, cassia, prunes, senna, and rhubarb; as emetics, ipecacuanha and squills; as stomachics,

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absinthium, centaury, and gentian; and he advises by way of drink, the frequent use of beer and wine; in which the young shoots of fir, or horse-radish root, have been infused. He recommends also as a means of promoting perspiration, the use of baths, made of an infusion of rosemary, marjorum, thyme or balm. To the infusion of malt recommended by Dr M'Bride, he objects that it often purges too much.

In the second period of the disease, the hot antiscorbutics, laxatives, and emetics, are, he tells us, to be laid aside; and in place of these, cooling and ascescent remedies are to be employed, such as the acetosella, lettuce, oranges, citrons, whey, butter-milk, vitriolic acid, vinegar, Rhenish-wine, &c. For the particular symptoms which then occur, remedies suited to the nature of each must be employed. For the bloody suffusion of the eyes, he advises a fomentation of equal parts of vinegar and wine, with a little sal ammoniac. When the gums become fungous, with ulcers in the mouth, he recommends that they should be washed with a decoction of guaiac
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acidulated with vinegar, or with the mel. rofaceum. For counteracting spontaneous salivation, he dissuades from the employment of purgatives or blisters: but recommends sudorific decoctions, as those of guaiac and sassafras, the frequent immersion of the feet in warm water, and the fomentation of the parts affected with mustard. For promoting the success of these practices, he advises the following powder:

℞ Sulph. vivi drachmas tres.

Gum Arab. drachmam unam.

Camph.

Opii. utriusque grana sex, M. f. Pulv. et divid in dos. xii.

One of these powders he directs to be taken every four hours: and when the salivation is either stopped, or even nearly so, he advises the addition of a little alum to the gargarism.

For the swelling of the legs, he advises fomentation, with a mixture of vinegar, spirits, and common water. And when hardness and pain occur, he recommends the following liniment:

℞ Ungt.

℞ Ungt. altheae.

Ol. Lini utriusque fescunciam.

Camphorae semunciam.

Spt. volat. sal. ammon. drach. tres. M.

When ulcers take place in the legs, he advises that they should be dressed with the ungt *Ægyptiacum*, mel rosaceum, or tincture of myrrh, without any ointment. And although mercurials in general have been condemned in scurvy as highly prejudicial; yet he asserts, that in obstinate ulcers, he has seen the best effect from dressing them with an ointment formed by mixing a dram of red precipitate mercury with an ounce of basilicon. Against the hæmorrhagies, from whatever part they may take place, he advises a decoction of the Peruvian bark, acidulated with spirit of vitriol, and an opiate at bed time.

In the third and last period of scorbutus, the symptoms which accompany the disease are of the most alarming nature. Of these Dr Bacheracht first treats of the scorbutic dysentery, as being one of the most remarkable. He advises that it should not be stopped till the acrimony of the humours has been sweetened.

ened. He condemns the use of emetics and purgatives; and recommends mucilaginous remedies, with gentle laxatives, as the pulp of tamarinds, cassia, and small doses of rhubarb.

He next treats of the putrid scorbutic fever; which, when it occurs, may, he observes, be considered as a proof of the highest malignity, and as the forerunner of death. But it should neither, he thinks, lead us to despair, nor to discontinue attempts to save the patient. The practices which he chiefly recommends are, exposure to free and cold air, washing with vinegar, the use of wine, and of Peruvian bark.

He concludes this treatise with a few general precepts respecting the treatment of the disease; of which the following are the principal:

1. That the scurvy, in its earlier stages, does not admit of blood-letting, excepting in those cases where there is a real plethora, and where the strength of the patient permits of it.

2. That purgatives and emetics ought to be employed with great circumspection.

3. That

3. That blisters are much more frequently prejudicial than advantageous.

4. That those liable to fainting should not be exposed to the air without great circumspection.

5. That scorbutics who have been for a long time deprived of vegetables and fruits, should at first be indulged in them with moderation.

6. That the decoction of the young shoots of fir, or of guaiac, is in general more salutary than that of bark.

6. That mineral preparations; as those of steel, antimony, and mercury, are in general highly prejudicial.

7. That the infusion of malt ought to be used with great circumspection, as often purging too much; and that drink prepared with an infusion of hops is much more salutary.

From comparing the present analysis with that of some parts of Dr Blane's book, given in the beginning of this volume, our readers will be able to contrast the sentiments of different practitioners, founding their observations on extensive experience, respecting the
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treatment of a disease often productive of the most melancholy consequences : And we may conclude with observing, that the diversity of sentiment which prevails respecting the effects of particular remedies, naturally points out this affection as a subject of still further attention.

SECT.

S E C T. II.

Medical Observations.

I.

The History of a Case of Rabies Canina attended with singular Circumstances, and terminating fatally, after a Salivation had been induced by Mercury. By Alexander Gray, M. D. Surgeon to the 3d Regiment of Seapoys in the Service of the Honourable East India Company in Bengal.

ON the 15th of December I was called to see a slave boy of about 12 years of age, belonging to Mr Wombwell accountant-general in the province of Oude, who had been bit by a mad dog. On inquiry, I learned that he had been bit about twenty

ty days before; and that the dog had died mad about twelve days thereafter. Examining the state of the wounds, I found in the left thigh five ulcers of a considerable size, which had continued open ever since the accident, two small cicatrices on his left arm, and one on the back. These had been ulcers, and healed up of themselves; while those of the thigh baffled the power of several country medicines which had been applied to them. His pulse was small, quick, and frequent. He was regular in his stools; and he complained of headach and chilliness, with which he had been affected for some days past.

Although the unsuccessful experience of others damped every hope of success from any attempt of mine, either in the cure of the present affection, or in warding off those dreadful symptoms which were to be expected; yet the earnest solicitude of the boy's master, who wished that nothing should be omitted, induced me to try the effect of some of those medicines which are chiefly recommended in this disease.

I immediately applied lunar caustic to the
 VOL. II. DEC. II. U ulcers

ulcers of the thigh, and strong blistering plaster to the cicatrices of the arm and back; and ordered two drams of strong mercurial ointment to be rubbed into the thighs and other parts of the body; and at the same time desired he should take a pill, consisting of one grain of calomel and one half grain of opium, every third hour.

These medicines were administered according to the directions: and on the morning of the 16th, he found himself, as he expressed it, very well, having very little fever, his appetite good, and the ulcers on the thigh discharging very well; while the cicatrices on the left arm and on his back were opened by means of the blistering plaster. What seemed a little remarkable, on the opening of the cicatrices by the plaster, small but deep ulcers appeared underneath, while the neighbouring parts that were equally affected by the plaster were scarcely inflamed. All the ulcers were fumigated with cinnabar, and dressed with a plaster consisting of equal parts of diachylon and blistering plaster.

A small room connected to a spacious warm bath was allotted him; and during the course
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of the day he used the bath several times. In the evening, he complained of a foreness of his gums, but continued the use of the pills.

On the morning of the 17th, after a good night's rest, he found himself perfectly easy, with a good appetite, and few or no febrile symptoms. The gums were swelled and red, accompanied with a considerable discharge of saliva. The ulcers of the thigh, as well as those of the arm and back, discharged freely; and after fumigation were dressed as before. He had recourse now and then to the warm bath.

He passed the night pretty well; and on the 18th found himself as before, excepting that there was a greater discharge of saliva, accompanied with a swelling and foreness of the edge of the tongue. He continued the pills, only two every day; and had been frequently in the warm bath, and remained in it half an hour each time.

At nine in the evening his pulse was rather quick and frequent, attended with considerable subsultus tendinum. He passed the night very disagreeably, and his sleep was

every moment interrupted with frightful dreams of horses fighting and going to eat him up. On the morning of the 19th he looked pale and fatigued; but his appetite was not in the least impaired. He continued the use of the bath, and with eagerness went into it, as he frequently found himself chilly. The spitting and foreness of his tongue and gums continued the same as the day before. The ulcers also discharged freely; but the feverish symptoms increased.

He passed the night much the same as the preceding; and in the morning of the 20th found himself extremely fatigued for want of rest. Now, for the first time, he found a difficulty on swallowing water; but was able to get down a little by means of a spoon. He swallowed solids with much less difficulty. A blister was immediately applied to the forepart of his neck; and was so far of service, that three hours after its application he was able to swallow liquids with some ease and without the assistance of a spoon. His eyes had a peculiar keenness, and appeared luminated, moving with extraordinary rapidity; and all his actions were performed with a
remark-

remarkable degree of quickness. When ordered to go into the warm bath, he ran with the utmost precipitation and timidity. His pulse was small and frequent; and every now and then he shrank from those who attended him, frequently mentioning the word *cuta*, which signifies a dog, but without appearing sensible that he had been hurt by that animal. All the ulcers continued running copiously; and as the soreness of his gums and tongue, with a great discharge of saliva, continued, the pills were laid aside, after having used seventeen of them, besides two drams of ointment. He was allowed to eat what he pleased, as he found his appetite was good, and he had but little difficulty in swallowing solids. He had no apprehension of his danger, and imagined he would soon get well. To procure a night's rest, two grains of opium were given him; but without effect. He passed the whole night without closing his eyes, and was violently agitated.

On the morning of the 21st, attempting to swallow a little water, he was thrown into the most violent agitations, with distortions of the muscles of his face, and danger of immediate suf-

focation. He was, however, but with much difficulty, able to swallow a little water by means of a spoon; and with some less pain and difficulty was able to get down a little bread and butter, which he devoured voraciously. He went frequently into the warm bath, and always with pleasure, finding himself cold when out of it. His pulse continued frequent and small, the gums and the tongue sore and swelled; but the spitting was diminished.

Every now and then the muscles of his face were thrown into quick spasmodic contractions; during which his eyes rolled extremely, as it were with dread of the objects near him, shrinking back, at the same time pushing his hands out before him, seemingly to ward off some disagreeable object. These fits were only of a moment's duration; nor could he assign any cause for being thus affected. By 12 o'clock of the day, the fits became more and more severe and frequent, attacking him in the warm bath, and most certainly the moment he left it. In attempting to approach a spoonful of liquid to his mouth, his hand was drawn back as it were
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by enchantment ; but wishing to satiate his intolerable thirst, he forcibly pushed his head forwards, which immediately shrank back with marks of horror in his countenance ; and his whole frame was convulsed for at least a quarter of a minute.

He was more successful in his attempts to swallow solids ; and till three o'clock in the afternoon was able to get down a little bread and butter, though with pain and danger of suffocation. From that time till six o'clock in the evening he frequently went into the warm bath ; but the convulsive fits becoming then more frequent and more severe, he could scarcely be persuaded to go into it ; and the simple mention of liquids, and even solids, now threw him into the most violent fits.

During the last twenty-four hours, he complained of acute pains shooting from the ulcers of his arm to the neck, breast, and head ; but had no uneasiness from those of the thigh or back.

At seven o'clock, his pulse was scarcely perceptible ; and about eight o'clock he had none at all in the wrist, while a throbbing and strong pulsation was felt about the heart ;

the extremities feeling at the same time exceedingly cold to the touch. He now became outrageous and frantic during the fits, and three men were scarcely sufficient to confine him to the bed.

The fits became uniformly more and more severe, with only a few minutes intermission, and were now accompanied with a quick convulsive motion of the muscles of the chest; during which the air was forcibly thrown out of the lungs, attended with a peculiar and loud noise. In the fits, he smote his breast violently from the anguish and pain he felt; crying out that his inside was on fire; and, in his native language, called to his God to deprive him of life, and relieve him of his misery.

From ten o'clock in the evening till four o'clock in the morning, when he died, he had continual efforts to vomit, but without effect. In the short intervals between the fits, when he seemed to slumber, I think I could perceive the spasm, all of a sudden, commencing at the region of his stomach and his throat; and apparently to relieve himself from immediate suffocation, he started up

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convulsed, and endeavoured to rescue himself from the hands of the servants who had hold of him.

Unless during the fits, his intellectual faculties were not the least disturbed : And the moment before his death he called for a bit of orange ; which approaching his lips he immediately expired. Being a guest with the master of this unfortunate boy, I had an opportunity of marking the gradual progress of this dreadful disease ; and during the last twelve hours of this affecting scene, I was not three hours absent from him.

While I have to regret with others the inefficacy of the remedies hitherto recommended in the cure of this disease, I think it will be allowed, that from the present case demonstration is afforded of the inutility of mercury, even when carried to salivation. The warm bath also, although used in the most commodious manner, and with every assistance art could give it, appeared to me far from affording even temporary relief.

Had I been as much convinced before as I became after the death of this unhappy boy, of this disease being so perfectly spasmodic,

I should have expected considerable advantage from the use of camphor or musk, in doses of one scruple, and that frequently repeated through the day, and before the affection of the gullet and stomach made any considerable progress : for after the fits have risen to a certain degree of violence, probably nature does not possess a remedy capable either to suspend their force or stop their progress. I have no other reason for imagining that camphor or musk would be of use in this disease, than their remarkable good effects in the hysterical affections of this country, when used in large doses. Since in this case, and perhaps in many others if duly attended to, febrile symptoms and affections of the brain preceded for some days the spasmodic contraction of the gullet and stomach, the diseased state of these organs may be considered as the effect only, while the cause exists in the brain, from the virus being first conveyed there.

The general nosological character of this disease seems to me far from being correct ; for the hydrophobia, which is marked as the characteristic symptom, may exist without
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any canine rabies. And although a dread of liquids manifests itself as the first alarming symptom of canine madness, the dread and aversion to solids, which symptom soon follows the other, ought also, I presume, to be mentioned as a characteristic of the disease.

About three weeks after attending this boy, a man was brought to me who had been bit by the same dog. He had, however, received but very little injury, being bit only in one place just above the haunch-bone, and through his cloaths. A little blood appeared at the wound, which soon healed up; and he is now to all appearance perfectly well.

Mr Murray, who was formerly an officer in the nabob of Arcott's service, has just now declared to me, that about three years ago, when at Madras, he saw a man brought into the fort raving mad. He had been bit in the morning by a mad dog, and died in the evening of the same day, tearing and destroying every thing near him.

II.

The History of a singular Affection of the Action of the Heart, terminating favourably.
By James Bennet, M. D. Physician in Cork.

AS an instance of the difficulty of forming a just prognostic, as well as of the surprising efforts of nature, the following extraordinary case may not be unworthy of the attention of medical practitioners.

Miss L——, æt. 10. towards the end of September 1785, was attacked with a rash, which at that time was frequent in this city. It so nearly resembled the measles, that one would be apt to mistake the two disorders for each other. This rash, resembling the measles in the appearance of the eruption, was evidently contagious; or, at least, so generally attacked all the children of the families where it appeared, that I cannot help looking on it

as such. The running from the eyes and nose was considerable; the feverish symptoms as great as is usual in measles; and the course nearly the same. The chief distinguishing character that I could perceive, was the absence of cough or pulmonic affection. As this, however, is but a negative one, it may be esteemed as no valid objection to the supposition of its being measles. But a convincing proof of the contrary is, that the children of the family here alluded to, who were attacked with it, had the measles long before; and the only child who had them not, escaped taking this.

The patient here mentioned had it so mildly, that medicines were thought unnecessary. In about a fortnight, however, from the commencement of the rash, and some days after returning to her usual exercise and diet, she complained of a swelling of the face; which (as I had not seen her for some days) I imagined might have been an inflammatory attack from cold; and accordingly ordered a dose of Glauber's salts, which had little or no effect in reducing it. At my next visit I perceived that the swelling was manifestly anasar-
farcous,

larious, and that the legs were also affected in a similar manner; but, as I was informed, subsequent to the face. I accordingly prescribed the usual diuretics, avoiding those which might injure the stomach (already much weakened), such as squills, &c. Those that in such cases I have found most frequently efficacious, are spir. nitr. dulcis, and infus. bacc. juniperi, which have rather the effect of promoting the appetite than otherwise. These, however, had scarce any effect. On the contrary, the breathing became more laboured; and the following extraordinary circumstance was noticed:—the child mentioned a considerable palpitation of the heart; but whether it occurred before or after the dropical symptoms took place, she could not tell.

On examining, I perceived an uncommon pulsation on the left side, at the joining of the fifth and sixth ribs with the sternum. The ribs in the region of it were considerably elevated; and it communicated so forcible a stroke to the hand when laid on the part, that, taking every circumstance into consideration, I could not avoid concluding it to

proceed from an aneurifmal affection of the heart, or some of the large vessels at or near their origin. The pulse, at the wrist, was small, tremulous, intermitting, and every way irregular. Alarmed at this discovery, I desired that other assistance should be called in.

Two physicians of eminence accordingly examined the patient; and with little hesitation concurred in the opinion I had adopted, and concluded that medicines of any kind must be ineffectual.

I must here observe, that the pulsation alluded to was at no time absent, or less in degree. Reckoning from the first dropfical appearance, she had been ill, at this time, about three weeks; was unable to lie down in bed; the respiration very laborious, and constantly moaning. From the oppression [and despondence of recovery, she anxiously expected death.

In this situation, directions were given to support her with wine; and, in short, to indulge her in any reasonable desire. I then discontinued my attendance, daily expecting to hear of her death; but was astonished when I was informed, in a short time after,
that

that her appetite daily mended ; a very considerable discharge by urine, which was heretofore scanty, took place ; and in less than a fortnight from my last visit, she was perfectly restored to health.

I shall conclude, by making a few observations on the above case. And first, with respect to its nature, I shall endeavour to make some conjecture.

As to its being dropfical in part, there can be no doubt ; but whether the accumulation of water was the cause or the consequence of the extraordinary affection of the heart, may be worth inquiring. In this we would be much assisted, if it could be ascertained which was the first symptom, that of the heart, or the dropfical appearance. But this was impossible, from the inattentive age of the patient ; though its pulsation and situation may warrant any person in concluding (if any thing less than ocular demonstration may be depended on), that it must be an aneurismal affection of the heart or large vessels. But, on the contrary, we must allow, that the event renders such a conjecture improbable ; as we know of no instances where aneurisms
of

of large vessels have terminated favourably, either by art or nature. As to water in the thorax or pericardium producing such a symptom, it is more than I find in any author. All those whom I have consulted, mention the “*pulsus exilis, tremulus* *,” &c. And, indeed, their observations are perfectly consonant to what, reasoning *à priori*, we would expect; for water, contained in the thorax, pericardium, &c. must, we would suppose, suffocate the motion of the heart in proportion to the quantity contained. In this case, however, the pulsation was as strong as I have ever felt it in any case of confirmed aneurism. This singularity has induced me to be thus prolix; and to request you would insert it, if worthy a place, in your very useful commentaries, as affording a proper caution to others, with respect to the prognosis, at least in similar cases.

* *Vide* Sauvage, de Hydrothorace.

III.

Two Cases of Ulcer in the Cheek, with which the Salivary Duct communicated, cured. By Mr Thomas Gill Surgeon, Prescot, Lancashire.

ABOUT the end of August 1778, Mrs Cooper of St Helen's, in this county, several years married, consulted me concerning a tumour on the cheek, which she perceived about two years before. It had gradually enlarged, and was now of the bulk of a middle-sized walnut; and of late it had become very painful. The skin appeared a little inflamed; but, wishing a more perfect suppuration to come on, the part was covered with Boerhaave's emp. nigr.

On the 7th of September she applied again; and the suppuration being now sufficiently advanced, the tumour was opened with a lancet;

cet; and, after having pressed out some pus, I discovered a discharge of saliva.

This immediately called to my mind the case related in the 2d Volume of Medical Essays of Edinburgh, by the late Dr Monro.

The cure by seton appearing to me very troublesome, both to the patient and surgeon, I determined to make trial of caustic. With this view, after ascertaining with a probe the course and length of the sinus, I introduced a proper-sized piece of the trochisci e minio, and retained it in the sinus by means of dry lint and adhesive plaster, which were occasionally renewed.

The eschar was suffered to separate without the application of any force; and, after its separation, I was much pleased to find an entire stop put to the salivary discharge. By the application of superficial dressings, and taking care to prevent an uneven cicatrix, the cure was completed.

Some time after, another woman having heard of Mrs Cooper's case, applied to me on account of an ulcer in the cheek. She had been under the care of a surgeon for a considerable time; but could not get it healed.

On examination, I found that there was a discharge of saliva from the ulcer ; and treated it exactly after the same manner with the preceding case. The cure was performed with the same ease.

As the trochisci e minio, had recourse to in the above cases, are not noticed in the last London and Edinburgh Pharmacopœias, it may be proper to specify the formula.

℞ Minii semunciam.

Merc. corrosiv. sublim. unciam unam.

Micæ panis—uncias quatuor.

Aq. rosarum q. s. f. massa formandis trochiscis idonea.

The troches are rolled into sticks of different lengths and thickness, and of a conical form.

IV.

The History of a Case of Chorea, successfully treated by means of Camphor. By John Wilson, M. D. Physician at Mansfield, Nottinghamshire.

ANN GASKILL, a poor girl, 15 years of age, after having been exposed to cold and wet weather, in August 1786 was seized with irregular convulsive motions of the right arm and leg. These symptoms gradually became more violent and extended. The muscles of the trunk of the body were similarly affected; and the leg and arm of the left side were frequently convulsed. Her head was repeatedly drawn aside; and on lifting any thing to her mouth, her arm was frequently and irregularly retracted. Her body was violently distorted when she attempted to speak, and what she uttered was

unintelligible. The powers of her mind were evidently impaired ; and, by the appearance of her countenance, there was no inconsiderable degree of fatuity. Her body was much emaciated ; the pulse was small and quick ; her skin parched ; what sleep she obtained was broken and attended with moaning ; her body was bound ; the catamenia had never appeared. For several months during the first part of her illness she was attended by Mr Brook, an ingenious and humane surgeon in this place. He gave her the most powerful medicines in the class of tonics ; such as bark, zinc, cuprum ammoniacum, chalybeates, mercury, and bitters, without the smallest advantage. Wearied at length with repeated ineffectual efforts to relieve her, he desired I would attend her ; and I found her with the symptoms I have described.

Viewing her disease as the effect of great mobility in the nervous system, I ordered her one of the most powerful in the class of nervous medicines, Camphor. She began with four grains three times in the day, with a small portion of asa-fœtida. Her symptoms were evidently relieved after she had
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continued her medicine some little time. Encouraged by this faint gleam of success, I increased the dose of the camphor gradually to eighteen grains four times in the day. This plan she pursued steadily, joined with a generous diet, for nearly three months. Every day gave her new incitement to adhere to it; and her perseverance is now rewarded by the enjoyment of her former health and vigour.

I have since given the camphor to an epileptic boy, in doses of thirty grains, with considerable benefit.

V.

A Letter from Dr Matthew Guthrie Physician at St Petersburg, to Dr Duncan, on the Effects of a cold Climate on the Land Scurvy, &c.

I FIND myself prompted by gratitude, for the pleasure I receive, on the arrival from Britain of your useful annual publication, to continue contributing my mite to the mass of valuable medical information contained in it.

I frankly confess (and I suppose many other practitioners are in the same predicament), that by the time the business of the day is over, I feel but little inclination to wade for information through the voluminous works published every day on our profession; and still I am anxious to learn every thing interesting and new on the subject in as few words as possible; as there are but few months in the year in which some cases do
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not occur, where our present means of relief are very inadequate to what a man of any feeling would wish them to be.

If therefore I can, by any remarks that may offer in Russia, repay but a small part of the satisfaction I receive on perusing the communications of your learned correspondents, it will give me much pleasure ; and if you think the following worthy of their attention, they are much at their and your service.

Several physicians, I observe, have of late years pointed out the influence of hot climates on the human body, and its diseases ; but few seem to have investigated the effects of cold : although I think, from my long residence in this country, that the latter affords matter of inquiry as well as the former. And in a paper on a species of antiseptic regimen, which nature seems in a manner to have dictated to the peasants of this empire, published in the 68th Volume of the Philosophical Transactions of the Royal Society, about the year 1778, I began a train of observations, which I have since continued, and shall now give a few of them, as an appendix to that dissertation, and illustration of its facts.

I there asserted, that the severity of the climate, and the dirty unwholesome mode of living of the common people of this empire, want of proper ventilation, &c. in short, a chain of almost unavoidable inconveniences attached to their situation for eight months in the year, as fully explained in that paper, must infallibly have marked them out as victims to the scurvy and other putrid diseases, were they not preserved from their attack by the regimen alluded to above; so highly antiseptic, and so excellently calculated to ward off the diseases which their situation threatens, that all the light of modern philosophy could not have indicated a better; as it seems to include all the discoveries on antiseptics of Pringle, M'Bride, Rush, Priestley, &c. And it is worthy of remark, that the British philosophers, and our unlettered peasants, have both arrived at the same great truths by such different roads, though it probably cost the latter many ages to discover what the former have done in a few years. Such is the advantages of scientific research, as conducted since the time of Bacon and Newton!

Since the publication in question, I have
seen

seen a melancholy confirmation of the truth of my then hazarded opinion, viz. the true sea scurvy raging on dry land, in all its menacing forms, and filling the hospitals of Peterburgh and Cronstadt with its martyrs ; as the aid of medicine did but very little to confine its destructive rage.

This extraordinary phenomenon appeared in the winter of 1785, and was found to have proceeded from a want of those very prepared vegetables on which I have supposed their safety to depend ; the crop of cabbage, cucumbers, carrots, turnips, &c. having failed that year, infomuch as to raise the price of the few gathered much too high for the pay of the land and sea troops ; and it was just amongst this description of men that the disease obtained : for the labourer, in his hire, has an eye to the price of provisions ; whilst the peasant in the country finds resources in such a case superior to men shut up in large cities. So that the sufferers are generally those who have a small fixed pay.

Our very enlightened and humane governor of Cronstadt (Admiral Greig) informed me, that perceiving medicine had but little

effect in the sea-port under his command, he sent over to the opposite continent a number of scorbutics; where they were furnished with more airy warm quarters, and had an opportunity of gathering under the snow a species of berries deservedly reckoned highly antiscorbutic in the north, *Vaccinium oxycoccos*; called here *Kylukova*; and probably a few of the *Vaccinium vitis idæa*, the *Brunista* of the Russians, another species of northern berries, but neither so efficacious nor so plentiful in winter, as they keep with difficulty under the snow. However, his Excellency assured me, that neither these, nor a plentiful supply which he procured for the sick of the very antiscorbutics, so efficacious in preventing the scurvy when constantly used as an article of food, were equal to the subduing of the putrid diathesis when once fully in possession of the system (a very curious remark in my opinion); nor was it completely vanquished till the kindly influence of the returning sun, and the same efficacious fresh vegetables which he raised in open air, set bounds to its career: although, I cannot help thinking, that the exhalations of the vegeta-
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ting earth, though little felt, has considerable effect in such cases.

I must here, I believe, finish my remarks on this subject, and defer the discussion of any other relative to the effects of northern climates, if I mean to leave place for a paper of some length, which you will probably be curious to see; viz. a description of this land *sea scurvy* (if I may be indulged in so whimsical a term), raging amongst troops that had not been from home, as it appeared in the hospitals of Petersburg and Cronstadt, drawn up for my information by one of our surgeons of the navy, who had an opportunity of treating it in both places, being sent to assist the surgeons of the hospital here, after he had seen it for a length of time at his usual residence, the sea-port mentioned above. This I prefer to any thing I can give you from my own observation and practice; as the military corps of noble cadets under my care were exempted from the disease, in consequence of being well supplied with what the troops wanted. However, you may depend on the truth and accuracy of the accounts, as the author, Dr William Brown, formerly surgeon

surgeon both in the British and Russian navies, now government-physician at Kolyvan in Siberia, is a gentleman who does honour to Edinburgh for diligence and knowledge in his profession, joined to great modesty. I have only explained a few things which he set down in the Russian language, as the paper was written only for my perusal, who of course must be familiar with them: And I have annexed a calculation he sent me on another occasion, of the quantity and quality of the air in the ward of the hospital more immediately under his care; wishing me to forward a proposal he had made, of having the summer temporary apartments for the sick, so much commended by the benevolent Howard on prisons, fitted up in such a manner as to receive them at an earlier period in the season than their ancient constructions would admit of, in order to thin the crowded scorbutic wards, where the foul air evidently retarded their cure.

I am anxious to inform you, that Mr Fitzherbert's postilion, mentioned in the tenth volume of the Medical Commentaries to have been bit by a mad dog, proven to be mad

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(a thing we are feldom able to do), and who was treated by mercury, &c. continues perfectly well, and never had any returns of thofe fymptoms which fo much alarmed me before pushing the unction fo far as I afterwards did, to the amount of four ounces of the ftrongeft unguent. mercuriale pharm. Lond. without having the leaft effect on the falivary glands, or even the gums.

Were one to indulge imagination on this occafion, we might furmife, that as opium is afferted by fome learned gentlemen to lofe its fpecific effects when acting on a fyftem tainted with fiphylis, there is a probability that mercury, when combating rabies, may likewise prefent as extraordinary a phenomenon.

The boy, foon after his recovery, quitted his Excellency's fervice, and went to England. However, his fellow fervants and countrymen kept him in view, at my defire; although it was unneceffary, as he has been twice over in Ruffia fince.

The circumftance of opium making fuch a figure in the laft volume of your Commentaries, leads me to remark, that if Sydenham
had

had practised in the north, his enthusiasm for opium might have been diminished ; as there seem to be circumstances in our climate which prevent its acting as a sedative in the generality of constitutions (a curious subject of future investigation) ; inasmuch, that on looking through a register I have kept of diseases in the public establishment under my care, for nine years past, I do not see I have employed two drams of opium in all that time ; and in the genera of fevers, where it is so much employed in Britain, not a grain ; although, in the list of deaths, I perceive that our loss has been very small indeed, in either the typhus or synochus. And although they are the most frequent species we have in common with the rest of Europe, we see as little of the true synocha of old authors as you probably do in Britain ; I mean in large cities : for in the country I should think it might still obtain ; as surely there the mode of living cannot be changed so essentially but that pure inflammatory diathesis may still attend vigorous health and muscular force, if ever it accompanied them, as we are taught by our forefathers to believe. But to return to our
opium :

opium: It evidently appears, that a most successful practice in putrid fevers may exist without the aid of opium. Nay, I cannot help suspecting, that the antimonials used by the gentleman in question had their full share in the cures related; especially as that is probably the only remedy that merits the term of specific (if any does), whether in removing febrile spasm or in evacuating morbid matter. As for my own part, I frankly confess, that my whole practice in fevers is confined to three or four remedies; viz. antimonials with or without bark, wine, and acids, according as there appears more or less septic tendency. And I speak from the register before me, where a large hospital-practice is recorded. But I avoid entering into any sort of detail, being afraid I have already encroached too much. It is always to be understood, in such a bare outline, that the occasional use of the lancet, and something to evacuate feces if the antimonials do not act downwards, are included.

May I just add to those hints of the influence of climate, that all sorts of stimulating sudorifics are contraindicated here; as they

immediately push the heat beyond Dr Alexander's sweating point (which by the by was a good observation never pursued), and require a deluge of diluting fluids to bring moisture on the skin, which are almost the only species of diaphoretics we employ.

I will encroach no further at present on either your patience or your volume; but reserve my other observations for a future pretence, to assure you with how much respect and esteem I am

Your most obedient humble servant,

MATTHEW GUTHRIE.

VI.

A Letter from Dr William Brown, Physician at Kolyvan in Siberia, to Dr Guthrie of St Petersburg, giving an Account of the Scurvy which prevailed in Russia in 1785. Communicated to Dr Duncan.

IN compliance with your desire, I shall endeavour to give you an account of the form in which I have had occasion to see the scurvy both here and at Cronstadt.

This disease was accompanied with a great variety of symptoms; all of which seldom or never appeared at the same time in the same patient; nor did they follow each other in any regular progression. In some people, it was first discovered to be present by the appearance of symptoms, which in others did not take place till the disease was far advanced. To give a distinct detail, therefore, of

symptoms, in such a manner as to point out the progressive stages of the disease, is very difficult. Hence I must be under the necessity of relating the appearances without regard to time; and if any were constantly remarked to accompany a certain period of the complaint, take notice of them as such.

I had no opportunity of seeing the scurvy at its first attack. We seldom get any patients but those whose complaints are of consequence enough to render them incapable of labour: But I think there is great reason to believe, that scurvy exists in the habit for a considerable time before the patient arrives at this degree of inability, or indeed perceives himself subject to any ailment. It is commonly said that laziness produces scurvy; and some physicians, and almost every body else, think they have reason to say so, from the circumstance of lazy fellows becoming the first victims to the disease. But I am apt to think this desire of rest is ill attributed to the state of the disposition, and ought to be considered as the first appearance of a symptom which constantly attends the complaint, viz. *debility*. The greatest number of the scorbutics

butics that I saw, were far from being averſe to motion on account of lazineſs; it ſeemed rather from an inability to uſe exerciſe that they wiſhed to avoid it. This ſymptom of debility is a conſtant attendant on ſcurvy, is probably the firſt that marks its attack, and moſt conſtantly attends it in all its appearances, and during its whole continuance; and according to the degree of it induced, we judge of the progreſs the diſeaſe has made. Here, Sir, I cannot help remarking to you, that I, as well as ſome others at Cronſtadt, had occaſion to obſerve the abſurdity, as well as danger, of that maxim ſo much in the mouth of many people, particularly of commanders, viz. of curing the ſcurvy by labour, and what is in England called, “ working “ the ſcurvy out of their bones.” The neceſſity of exerciſe we do not diſpute; but we think it a remedy that ought to be cautiously employed in a diſeaſe where effuſions of fluid are ſo apt to occur, and where there ſeems to be a very great degree of leſſened coheſion in the ſolids. We ſaw ſome caſes where the moſt dangerous ſymptoms, viz. pain in the breaſt and oppreſſion of breathing, were une-

quivocally increased by exercise, though not violent, yet too unreservedly employed. The debility mentioned above seemed to take place more particularly in the muscles of voluntary motion. The force of the heart and arteries seemed in many cases to be increased, if we may judge from the state of the pulse. The pulse was, in many instances, on the patient's first arrival at the hospital, both full and hard. Even in some cases where, during the whole course of the disease, the pulse had been in a natural state in most respects, yet a few days before death it attained a wonderful degree of force, with a kind of jumping motion, as if the artery, lying in a loose cellular substance, were considerably removed from its place on every new influx of blood. The debility did not seem to extend either in a remarkable degree to the stomach, till a week or so before death, or on an attack of diarrhoea; in which cases the sick were unable to eat their portion of food. At other times, they generally asked for and ate what is called ordinary diet*. They very seldom complained

* See the account of hospital-diet.

plained of sickness at stomach, or other marks of indigestion.

Another symptom frequent, though by no means constant, was a *quickened pulse*, with a small *increase of heat*; but without headach, thirst, loss of appetite, or the other common concomitants of fever. This symptom seemed to give but little uneasiness. In some it attended the whole course of the disease; in others it continued only a few days, disappeared for a like space, and was again renewed. We had some patients who arrived at the hospital with scurvy, and certain appearances of idiopathic fever; but I do not recollect any instance of any of my patients being seized with any thing but what may be termed a symptomatic acceleration of the action of the heart and arteries, during their continuance under my care.

A pain in the breast was also a frequent symptom. This, at Cronstadt particularly, was often the first complaint; and it was only on the discovery of other symptoms which gave no uneasiness, that we distinguished it from a real pneumonic inflammation. It was attended with all the symptoms of pneumo-

nia, and was cured by blood-letting. I saw some cases where it was so violent as to threaten instant dissolution, and where it was immediately almost entirely removed on a very few ounces of blood being taken away. Query, Whether in these cases, particularly where it seized the people suddenly either at or soon after work, it was not owing to the preceding labour?

In other cases, where the disease was far advanced, and where the debility was very great, this symptom, though not near so violent, was found to be a very bad omen. And I think, where I observed a great quantity of sputum, although freely spit up with the cough which generally attended this symptom for a few days, that it was a more certain sign of what we had before too much reason to dread, viz. a dropsy of the breast; which I believe in every instance proved fatal. Perhaps in these cases the pain in the breast was the consequence of serum already collected there, though not in such quantity, nor attended with such effusions into other parts, as might more certainly point out the nature of the complaint. The pain in the breast,
how-

however, was not always a mortal sign, although happening in an advanced stage of the disease. It sometimes made its appearance attended with a cough, remained a few days, and then vanished.

Serous effusions were also common. We had several patients who came into the hospital affected with scurvy and dropy at the same time. In these cases, it was difficult to judge which was the original disease. But the effusions I mean are those which appeared when the disease had almost finished its course, and which were always forerunners of death. These effusions put on the appearance of anasarca, ascites, or hydrops pectoris, or of all three together. Cases of anasarca were almost always attended with sphacelus affecting the parts most distended, chiefly the feet and scrotum.

A colliquative *diarrhœa* often preceded, and almost always attended, the above symptom. It sometimes took place without it, and had generally as fatal a consequence. It was on the appearance of these symptoms that the stomach was disordered. Loss of appetite was then complained of as well as nausea.

A diarrhœa, though never a favourable symptom, in cases where great debility had not yet taken place, was even a common appearance; and from what I observed, whether owing to the use of medicines or the nature of the disease, the belly was generally disposed to be loose. These loosenesses, for the most part, lasted only a day or two, were productive of no bad consequences, and were easily conquered by a little rhubarb with some laudanum: but the others yielded to no remedy I saw employed, and were for the most part accompanied with gripes, or a fixed pain in some part of the belly.

Giddiness and *fainting* on sitting up, although mentioned as very common symptoms in scurvy, were not frequent among the patients I had occasion to see. They were present, however, in some cases, particularly the former. One patient fainted on being raised twice; but he had been for several days labouring under a diarrhœa, and was almost already in the very jaws of death.

Apoplexy has sometimes been observed. I know of only one case, however, in which this disease supervened on scurvy. The patient's
brain,

brain, on dissection, was every where covered with a matter seemingly purulent; and a good deal of water was found in the ventricles.

Putrid gums and *fætid breath* have always been mentioned. Though these symptoms were generally observed, yet we had many cases wherein they were wanting, although the other incontestible proofs of scurvy took place. They were commonly attended with a great flow of saliva; which, during sleep, ran involuntarily from the patient's mouth, and was very troublesome from the circumstance of rendering it very difficult to keep the pillows and bedding dry.

Hæmorrhagies, particularly bleeding at the nose, happened to several. It was most frequent in those that had a strong full pulse, and at the beginning of the disease. I did not observe it to be a common symptom in more advanced cases: nor did it, in any of my patients, nor in any others that I have heard of, occasion fainting and death. I had some that said they spat up blood; but as their gums were affected, I was not clear of the fact. One said he passed bloody urine,
but

but he recovered ; and, on inquiry, I found we had only his own word for it.

The external appearance of the limbs was of three kinds : 1st, The legs and thighs became tumid, resembling an œdema ; though with this difference, that they seldom attained that dead paleness which attends dropsy ; nor were they often affected with inflammation, as is the case with swellings of the feet, when the skin is much stretched with water. They pitted on pressure. This tumidity frequently appeared in the face, which was often the only part swelled. This case was almost always attended with bad gums, and often with a difficulty of breathing from effusions into the thorax. It was chiefly in this species of external appearance that the large, purplish, black discolourations, took place. These principally affected the insides of the thighs, knees, and calves of the legs ; the insides of the arms, and parts around the eye, resembling a black eye from a blow. There was, however, no part of the body exempted from them ; or, at least, they were not entirely confined to the parts mentioned ; for I have seen them entirely covering one side of the breast

or

or belly. When they affected the hams and thighs, they were generally conjoined with contractions of the tendons, which rendered it impossible to extend the limb. They were also sometimes accompanied with a hardness of the parts over which they were situated: More generally the parts seemed to the feel to have only acquired a greater degree of plumpness and elasticity. The 2^d kind was different from the above, in as much as it was attended with little tumor, but with redness and great hardness. This always affected the leg below the knee, and principally the ankle joint. I saw it in no other part of the body. The colour was nearer that of erysipelas than that of phlegmon; but it differed essentially from both, never terminating in suppuration, nor spreading, nor rising into blisters. It was perfectly indolent and chronic; and it was chiefly observed in those people who had been formerly subject to scurvy. To the touch, it was very hard; and gave the leg, as far as it extended, the feel of a piece of wood. This species was often without tumor; and, on the contrary, there was often a wasting of the limb.

limb. It chiefly affected the ankle joint, which it generally deprived of motion entirely; affording an appearance, as if the bones of the foot and leg had grown together, and formed only one substance. The 3^d kind consisted in a shrinking, roughness, and dryness of the skin; which was every where covered with a number of purple spots, about the size of a small grain of barley. These spots were scattered over the whole surface. They were also observed sometimes in the tumid limbs, though not commonly. All these cases were accompanied equally with contractions of the ham-strings; though these contractions did not necessarily accompany them, nor take place in every individual. Pains in the knees, calves of the legs and ankle-joints, were a very general complaint, and attended the disease during its whole course. Hardnesses were also generally felt in the calves of the legs and muscles of the thighs towards the knee, although no external discolouration took place.

Ophthalmia scorbutica deserves also to be mentioned. This consisted in an effusion of red blood under the tunica conjunctiva, and
appeared

appeared as if the whole or a part of the opaque cornea was covered with a clot of blood lying upon its outside. On nearer inspection, it was seen to lie under a membrane, from which it derived its bright shining colour. At a little distance the opaque cornea seemed to be elevated above the plane of the lucid cornea, which appeared as it were in the middle of a clot of blood. I saw no cases where the effusion was continued beyond the margin of the lucid cornea, or where this seemed in the least affected with the disease, nor where the humours of the eye seemed to be in the least subjected to any change from the presence of the disease. It was sometimes the only symptom of scurvy present, and was attended with no pain or other inconvenience, except what arose from the deformity. In other cases it was joined with an inflammation of the edges of the eye-lids, as well as with the more common symptoms of scurvy.

Ulcers scorbutica were sufficiently common. These sometimes began with the appearance of a small red spot, which gradually increased without much, or indeed any, active inflammation. They had more the appearance
of

of a blister, with a very thick covering, than of a suppurating tumor, and contained a fluid of a deep blackish red colour; which colour they imparted to their covering. On being opened, they discharged a thick bloody sanies, and were sometimes found to have covered a finous ulcer.

Swelling of the joints of a singular nature took place in some patients. This I had occasion to see in one under my care; and I have received a more particular account of it from Mr Maximovitich, an ingenious surgeon, who has particularly attended to the method of cure and appearances on dissection. My patient had been long ill of the scurvy. The first appearance of this swelling began with a pain in his shoulder, which was the seat of the disease. Some days after I found the whole shoulder tumid; but without any discolouration, or the feel of an inflammatory congestion. The tumor continued increasing for some time, when he found an inability to raise his arm; not on account of any pain the motion gave him, but owing to a kind of paralytic affection of the muscles destined to serve this purpose. His shoulder

was now much swelled, the scapula being removed to about the distance of an inch and half from the ribs; which gave the patient the appearance of having a hump on his shoulder. There appeared also to be a collection of matter under the shoulder; and under the edge of the latissimus dorsi muscle, towards the arm-pit, a seeming fluctuation was felt. In any other than a scorbutic case, I should have been led to make an incision, with a view of evacuating the supposed matter; but recollecting that Dr Lind observed suppuration very seldom, if ever, to take place in scurvy, and well knowing how common effusions of serum, &c. are made into the fibrous substance of muscles themselves, as well as into more lax parts, I was contented to look on the tumor in that light, and wait for the recovery of the patient's general health, as the best means of relieving him from this symptom. This seemed to be also the opinion of Dr Mattei, the physician to the hospital, as he only ordered some topical applications. As the patient got better of his scurvy, the tumor began to disappear, and he was in a way of recovery, when he was put from un-

der my care upon a new regulation in the distribution of the sick. Mr Maximovitich tells me, that he, being deceived by the appearance of fluctuation in these tumors, with the consent of Dr Mattei, opened three of them ; one situated in the shoulder, and two in the knees. Two of these patients died, the opening having degenerated into a bad sore, and the scurvy, in other respects, becoming worse. On making the incision, he was surprised to find that not one drop of matter appeared, though in one case the opening was made to the bone. On dissection, he found in one case the scapula, and under it the ribs, carious. In both there was a good deal of matter resembling the juice of currants, effused into the cellular membrane, and even into the substance of the muscles themselves. In the other case the wound became a bad fungous ulcer, which yielded to no method of cure he could think of, till he tried the following medicine, which has a place in some dispensaries under the name of

Aqua vulneraria thediana.

℞ Aq. acetosellæ.

Spir. vini rectificat.

Spir.

Spir. vitriol. ten. aa lbij.

Sacch. albi lbj. M. et digere octo dies
in B. M.

By the use of this water, the ulcer was cleaned and afterwards healed. He has applied this medicine to several of these tumors since, and has always found it to answer without opening them.

I have taken no notice of the despondency and lowness of spirits mentioned as a general attendant on scurvy. This undoubtedly took place amongst us; but it is not easy for a foreigner, who is not thoroughly acquainted with the language and ordinary manner of the Russians, to form a good judgment of its degree. The daily instances of the fatality of the disease, must undoubtedly have occasioned many melancholy reflections; nor would the crowded manner in which they were disposed for want of room, serve much to exhilarate their spirits. Perhaps the anxious and suspicious inquisitiveness with which some of the commanders inquired after the treatment they met with in the hospital, though undoubtedly well intended, did more

Z 2 hurt

hurt than good ; as it induced the sick to have a distrust in those about them.

To give some idea of the state of the air in the sea hospital at Petersburg, I made the following calculation :

One of the Wards is,

	Feet.	Inches.	
In length	40	6	} Therefore contains of air, in cubic feet, 10206
breadth	28	0	
height	9	0	

During the winter 1785-86, there lay in this ward
48 sick persons ; the bulk of whose bodies was
at least two cubic feet each : therefore subtract 96

The quantity of air in the ward 10110

N. B. I take no notice of the beds, peeches, ovens or stoves, and other furniture necessary for the sick ; as the spaces in the walls made by the windows perhaps equalled these.

Suppose the pulse of the sick were, at an average, 80 in a minute, and that the pulse beats four times every respiration ; then these 48 men would breathe 806400 times every 24 hours.

Every respiration, at the lowest computation, a man breathes 15 cubic inches of air.

Hence

Hence these 48 men, in 24 hours, breathed 7000 cubic feet of air.

The room contains	10110
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The patients breathed	7000
-----------------------	------

Remain	3110
--------	------

If to the destruction or defilement of air by breathing, be added the other sources of iniquation from the putrid exhalations arising from the bodies and excretions of the sick, it is easy to conceive in what an impure air the patients must have lived, and that a freer ventilation than the climate will admit of, was necessary to preserve the purity of this vital element; and at the same time the propriety and necessity of removing the sick early in the spring to those temporary buildings named Cogers, is very obvious.

HOSPITAL DIET.

Ordinary diet: A pound and half rye bread every day.

Z 3

Half

Ordinary diet : Half a krushka, or one bottle,
of beer.

Sundays, Tuesdays, and Thurs-
days, one pound fresh meat,
with broth : other days half
a pound, with broth.

Kasha (porridge of buck-
wheat) with butter, every
day.

Some salt.

Milk diet : About a pound second flour bread.

Half a krushka new milk.

Half a krushka kiscell (or sowens,)
every day.

Diet with fowl : White bread as above.

Half a fowl with soup.

Pulmentum : Bread, as above.

Thin kasha, or porridge of buck-
wheat.

The drink for those that have not beer is gi-
ven according to the prescription of the
practitioner.

HOSPITAL BEDDING AND CLOATHING.

A cravat (or bed-stead) with a canvas bottom.

A rush-bed, and over it a wylock, or mattrafs.

Pillow, with pillow-case.

Sheets and woolen coverlet.

Cloathing: A linen night-cap; a pair ditto
trousers and shirt; slippers; also two or
three shubes (or fur coats) in winter, and
night-gowns in summer, to every ward.

VII.

A Letter to Dr Duncan from a Friend in London, giving an Account of the Use of Injections with Spirit of Wine in the Cure of Gonorrhœa ; with Remarks on the Treatment of Erysipelatous Inflammation, and other Medical Observations.

I FIND the most efficacious, least painful, and easily procured injection for venereal gonorrhœas, to be pure rectified spirit of wine, diluted with six or eight times its bulk of water ; or to such a degree that the injection gives only a few moments smarting pain, without heat, after it is thrown into the urethra. If this be used within a few days after the gonorrhœa has appeared, from the trials I have made, and those of my pupils, I believe it will, nine times in ten at the least, cure the complaint. It should be injected

ted every three hours, or oftener, till the running begin to diminish (which it will do in a day's time), and then it is required less frequently.

I was led to this remedy, by considering, that inflammation of the skin, and of the urethra, and other membranes that open externally, only differ in the one being a secreting membrane, and the other not; and, therefore, as we diminish or cure the inflammation of the skin by spirit of wine (as in burns, erysipilas, &c.), we should expect it to be equally efficacious in inflammation of the secreting membrane of the urethra.

In the common erysipilatous inflammation of the skin, with a fever preceding and attending it, I in all cases use opium, in quantity from a quarter of a grain to half a grain every four to six hours, and give one purging dose of crystals of tartar. Externally, I always cover the inflamed skin with a mixture of lapis calaminaris, and farina of wheat or oats, and foment it thrice a-day with a decoction of poppy heads, chamomile flowers, St John's wort, adding spirit of wine to the extent of one-sixth of the bulk of the decoction.

The

The Peruvian bark I exhibit with the opium as much as the patient's stomach will bear without sickness, in powder, decoction, and tincture ; but only in those cases where I am apprehensive of a gangrene, where the patient is extremely weak and of a bad habit, or where ulcerations are likely to ensue. Otherwise, I find the opium, purging once or twice, and topical applications, successful ; and Peruvian bark unnecessary, and perhaps hurtful.

Where the patient is young, the habit good and strong, the pulse strong and frequent, and other symptoms are present of increased and inflammatory action of the sanguiferous system, but where the inflammation is purely of the skin, I do not bleed, but I purge every second day, and exhibit opium as above mentioned : But if in such a habit, the parts subjacent to the skin be inflamed considerably, I employ blood-letting as well as purging ; and I still exhibit opium, and use the above topical external applications. I rarely have occasion to give the Peruvian bark, and still more rarely to use blood-letting ; opium and purging, with topical applications, being all that

that is generally required. The diet is of milk and farinaceous matter.

The volatile alkali I almost always use in preference to the fixed vegetable alkali ; but the fossil alkali preferably to the volatile alkali, as diuretics in dropfies.

As a purgative and diuretic, I find nothing so effectual and so agreeable to the stomach as the crystals of tartar ; which are now growing more than ever into use, while the digitalis is declining, and will I think soon suffer its former fate. The acid of tartar promises to be more efficacious than the crystals of tartar. It is easily obtained by decomposing the tartar with lime, and then washing off the alkali, and afterwards decomposing the tartarified lime by vitriolic acid.

The inflammation and suppuration under the psoæ muscles do not occur so often as has been supposed ; because I find on dissection, diseases that were called psoas abscesses, were abscesses under the glutæi muscles, and others were abscesses among the muscles of the thigh. It is not difficult to distinguish inflammations which end in suppurations among muscles, particularly under the psoæ, even in their
first

first stage, provided the history be properly obtained, and that compared with the rheumatism and other resembling diseases.

I have lately made the most agreeable purgative neutral we have in the *materia medica*, by saturating the fossil alkali with phosphoric acid, which crystallises into rhomboidal crystals, that are neither very salt nor at all bitter. Like Glauber's salt, they contain above half their weight of water in the crystallised state. It requires about the same quantity as of Glauber's salt to purge a patient. The acid of phosphorus I make with great ease and in the cheapest way, by dephlogisticating the phosphorus itself by means of nitrous acid, as in the dephlogistication of sugar in making saccharine acid.

Nitrous æther I make with great ease with Wolfe's apparatus, from nitre, vitriolic acid, and alcohol, as directed by Mr Wolfe; and am surprised it is so little known or used. I prefer it much to vitriolic æther.

A bath from 80° to 85° is considerably more strengthening than the common cold baths; because it can be longer applied, and the cold be diffused more completely through
the

the system, without affecting the sanguiferous system so much as the cold bath.

The vitriolic acid not only cures the itch, but various other eruptions; and I have some proofs that the other fossil acids produce the same effects as well as alum.

I use mercury in dropfies always externally; by which method I have the benefit of friction, and avoid disordering the stomach and bowels.

It appears from dissections, that porter-drinkers are as subject to diseased viscera, and ascites consequent thereto, as drinkers of spirits.

VIII.

A Letter from Dr Graham at Stirling to Dr Henry Galloway, giving an account of violent Pains from a particular Species of Worm under the Skin. Communicated to Dr Duncan.

IN the month of August last I was consulted in the case of John Stewart, a young gentleman about twelve years of age, in the country of Appin. For some time past he had been afflicted with excruciating pains in his limbs, and other parts, to such a degree as to render his life completely miserable. This was ascribed to his having got his cloaths drenched with rain in a boat as he was fishing in the night-time. Believing his case to be entirely rheumatic (which I still think it was in some degree), I could do little more, at so great a distance from medical help,

help, than to direct him to be wrapped in flannel, and to blister the parts occasionally which were most pained.

In January last I received a letter from his father, dated the 17th of that month; of which the following is an extract:

“ I am now favoured with both your letters; by which I find you prescribe no kind of medicines for my son, who stands much in need of relief; this very day being one of his worst. But one thing has happened to him which I dare say will surprize you. About eight days ago he discharged two worms; the one from his breast, the other from his knee. For some hours before, he was like to go distracted with racking pain in both places. Ever since he had some respite till this day. We have one of the worms preserved in spirits. It is near an inch long, all in joints in the back, with a hard scale on it. I am positive he has more of them, from the manner of his complaint now. Pray have you any knowledge of these creatures? Or is there any assistance can be given in getting quit of them? I am
“ positive

“ positive he has the rheumatism, with this
“ unlucky addition.”

In answer to this I wrote, that the boy had probably slept on the grass, or been otherwise exposed to some kind of flies, which, piercing the skin, had lodged their ova in the puncture. These being hatched, and the maggots come to maturity, and now probably ready to become aureliæ, they made their way through the skin in search of a proper place where they might undergo that change ; and that, consequently, I hoped he would soon be entirely freed from his troublesome guests. Meanwhile, I asked the favour of the father to send me a few of the worms.

In another letter, dated 24th January, he says, “ Since I wrote my last, another worm
“ came out of Jack’s knee, of which I was
“ an eye-witness, attended with racking pains.
“ The pain got to his head two days ago,
“ and so swelled it that he sees but a little in
“ one eye. Last night he was blistered be-
“ hind his neck ; but no relief as yet. In
“ short, he is in a miserable situation, and
“ has lost his appetite entirely.”

Soon after this he discharged another worm
I from

from above his eye, and others from different places ; all, so far as I could learn, such as are exposed to the air, and to which the flies might have had access.

A few days ago I had another letter, dated the 15th April ; which says, “ Jack is still
 “ tormented with vehement pain in the foot
 “ and knee alternately ; and the cold water
 “ is the only thing which gives him ease.
 “ No swelling : and, even in the time of the
 “ pain, he can suffer it to be rubbed hard ;
 “ which he could not do when discharging
 “ the worms. And the pain is now quite
 “ different from what it was at that time.
 “ I send a small vial with three of the worms.”
 These I now send you, together with a dried one in another vial, which appears to be of the same kind, and which I received on the 15th of February last. It was discharged from another young man in the western parts of Perthshire : And I have heard of several other boys in the Highlands, who were afflicted with the same disorder this last winter.

IX.

A Letter to Dr Duncan from Mr Thomas Hamilton Student of Medicine at Edinburgh ; on the benefit of Cyder in the cure of Dropsy, and on the induction of artificial Emphysema.

YOUR communicating to the world whatever regards the restoration of health to mankind, or whatever may contribute to the advancement of any branch of medical science, prompts me thus to lay before you a fact respecting the cure of dropsy, which a few days ago, I had the happiness of hearing you speak of, with so much precision and judgment. I am induced to mention this practice, as you did not take notice of it in your lecture : and perhaps (in this country, where the article is little made use of, and in general but little known unless at some particular

cular taverns in the summer season) it has never had a fair and candid trial by individuals or practitioners. The article to which I allude is the liberal use of cyder, as practised with very great success among the common people of Devonshire; a county in England where it very much abounds, and is to be had in the greatest perfection, and cheaper than small-beer. I can with confidence aver, that I have seen cures performed by it, where no other medicine or regimen had been used, and that too in the advanced state of anasarca or general dropfy: And it seldom fails in local or partial dropfies, in the incipient or advanced states. It is drunk of plentifully, perhaps to the amount of two or three English quarts a-day. Here is then a very large quantity of fluid taken, in one day, which must, in some measure, invalidate the prevailing opinion, that the profuse use of fluids is pernicious in this disease.

In what particular manner this medicine operates, I will not presume to say, as I only mean to mention the fact. But, with all deference and submission to your superior

Al a 2 judgment,

judgment, I shall, with the utmost diffidence, offer you my opinion.

In so far only as the disease depends either upon a local or general relaxation or debility, or a loss of tone and power in the absorbent system, or when the exhalant is so redundant as to overpower the absorbent functions, when there is no suspicion of scirrhus in any of the viscera, or when the disease has not been ushered in by jaundice, it may, in some measure, depend on its cooling astringency, having a most peculiarly grateful cordial acidity, of which those patients are particularly greedy. Perhaps it may operate gently in the way of diuresis and catharsis; or as stimulating the absorbent system in general. But if conjoined in the way of regimen or drink, along with those very powerful remedies you mentioned, I doubt not of the happiest success attending it. It allays the immoderate thirst, and prevents the desire for liquids; which alone is a great object. Thus it may be substituted for other drinks, and be a convenient vehicle for other medicines, as the bark, &c.

I here, likewise, take the liberty of offering

ing you a hint respecting the nature of emphysema ; which only serves further to corroborate your opinion of the nature of that disease. Though the natural disease has never occurred to me, I have seen the artificial one in the highest perfection, and in the living human body too. This odd sort of language may perhaps startle you a little. It is a practice, though happily not a common one, and as happily little known among the vulgar. But there are a few who know it, and turn it very much to their advantage ; I mean among seamen and soldiers. For there is, perhaps, no set of men (excepting slaves) who have more frequently recourse to imposition, and who are more skilled in producing diseases. These men make a small puncture or incision into the cellular membrane of the scrotum, into which they introduce a blow-pipe, and inflate the whole scrotum to a most enormous size, exactly resembling a rupture ; and this extends up the inguen to the insertion of the chord. This they practise to obtain their discharges from the service. And thus the skill and judgment of surgeons, in both army and navy, are doubly employed, in the de-
tection

tection of imposture, and the cure and discovery of real disease ; which every charitable man must allow is not always in the power of any human being. I had this confession from one whom I was employed to examine as an object for invaliding ; whose answers to the questions I put to him, respecting his disease, were so evasive and contradictory, as to lead me to suspect a falacy, which I at length detected.

X.

An Account of the use of the Pepper Medicine of the West Indies in the Cynanche Maligna. Extracted from a Letter written by Mr James Stephen, Surgeon in St Christophers, to Dr Thomas Cochrane Physician in Edinburgh. Communicated to Dr Duncan.

IN the month of June 1786, we had a very long tract of warm sultry weather, notwithstanding frequent rains. It was remarkably calm during this and part of the following month. The thermometer in the shade for several days stood at $91\frac{1}{2}$. Many children, and not a few adults, were attacked with the cynanche maligna, as defined by Dr Cullen. It yielded to the usual remedies, viz. emetics and calomel boluses, with James's powder, at night; and the Peruvian bark, snake-root, and wine, during the day. If

the fever was attended with great heat, we gave the snake-root with nitre. This method, with the assistance of detergent gargles, and sometimes blisters round the neck, in general answered pretty well.

This species of cynanche was not always attended with any miliary eruption. When an eruption did occur, I could not observe that the fever was abated on its coming out ; nor were any of the other symptoms manifestly or considerably alleviated. But in cases where the eruption did take place, the patients in general recovered sooner than where there was no eruption.

During the last weeks of July, and during the whole of August, a sore throat of a different kind prevailed. The uvula and tonsils appeared of a pale red colour, as if distended with water, and the uvula in particular seemed to be exceedingly relaxed. There was, however, no great difficulty in swallowing. The pulse felt very low, and was at the same time very quick. There was no increased heat on the skin ; on the contrary, it was often rather cold, with clammy sweats. The patients at the same time complained of great lassitude

lassitude and oppression of spirits ; and they were frequently affected with delirium. But this was not a constant symptom. For the most part, on the third day, a tough white slough was observed to cover the uvula and tonsils ; this very soon assumed a dark dusky colour, and the parts emitted a great fœtor.

This sore throat, notwithstanding the liberal use of Peruvian bark, snake-root, and wine, with the most stimulant gargles, proved very fatal among the children. At this juncture the following receipt appeared in the Antigua newspapers, as an useful remedy in this disease :

Take two table-spoonfuls of small red pepper, or three of the common Cayenne pepper, and two tea-spoonfuls of fine salt ; beat them into a paste, and then add to them half a pint of boiling water. Strain off the liquor when cold, and add to it half a pint of very sharp vinegar. Let a table-spoonful of this liquor be taken every half hour as the dose for an adult ; diminishing it in proportion for children according to their age.

As the remedies mentioned above had all
failed

failed of producing the desired effect, I resolved to make trial of this; and I was surprised at the rapid success attending its use. The slough in a short time began to separate, the spirits were immediately raised, and a kindly heat was soon excited, accompanied with a gentle moisture on the skin.

This medicine I am confident saved many, when no hopes were entertained of their recovery. I have seen patients with a glossy eye, with the pulse almost entirely sunk, and incapable of articulating a single word, who were yet rescued from this state by the use of the medicine I have mentioned. I am within bounds when I say, that I have administered it to four hundred patients with the happiest success. I have also used the same preparation of the pepper in the cynanche maligna with very great benefit. It promotes perspiration; it is a strong stimulant, and has all the effects of a powerful antiseptic.

Let me also mention another practice which may perhaps be new to you in Europe. In three cases of the dry belly-ache, when every remedy usually recommended had failed, the sand-box seed, or *Hura crepitans* of

Lin-

Linnaeus, procured evacuations without any griping: but it left behind it an amazing languor. In two of these cases, the patients had for some time an almost constant vomiting; which, however, was checked by the use of columbo-root. In the other case, only one seed and a half was used. This dose operated in about two hours, and was not followed by vomiting.

The French physic-nut leaves, or *Jatropha multifida* of Linnaeus, had been used without any benefit in two of these cases. This remedy has in general been had recourse to in such cases, as the last resource; and in most instances it is very effectual. In Long's history of Jamaica, he represents the sand-box seed as being so violent a drastic purgative that it can never be employed with advantage. These cases, however, contradict his assertion, as no violent gripings were excited by its use. Two ladies of my acquaintance, concluding that it would be a pleasant purge, eat half a seed each. It operated briskly, but without griping them; and it left behind it that languor which I have formerly mentioned.

XI.

Florum Arnicæ optimi effectus in promovendo Mensium Fluxu in Virgine octodecem annos nata, nondum antea lunare profluvium passa, instituto insuper naturali usu artuum inferiorum per triennium paralyfi correptorum, observante Christ. Jac. Theoph. de Meza, M. D. Medicinæ et Artis Obstetriciæ. Pract. nec non Memb. Reg. Soc. Med. Hafn. ordin.

PUELLA quindecim fere annorum, tenera nervorum compage donata, choreis forsan æquo plus data, huic oblectamento non semper innoxio, per integram indulget noctem, ut tandem lassata sed non fatiata matutinis recedens horis, se quiete ac somno tradiderit, ad undecimam antemeridiem usque. Post meridiem autem, satis alacriter se habens, vestes sibi induit, amicam tripudii nocturni comitem

comitem visura. Viam tenens audit ululatum horrendum, indeque metu perculsa properat amicæ domum. Ibidem advenienti occurrit canis semimortuus, ante ejus pedes cadens utpote a carnifice male multatus. Terribile hoc spectaculum tantam vim exercet in nervos, natura vel et forsan saltatione prægressa magis irritabiles redditos, ut dicto citius omnino caderet sensibus orba. Domum fertur, ibidemque adhibitis variis auxiliis et remediis non nisi post dimidiam horam ad vitam evocatur. Surgere conanti e sella pedes fallunt. horumque usum eidem denegunt sensu et motu carentes. Hoc in statu curru vehitur proprias in ædes, ibidem secundum artem curanda, atque pedum paralyfi statim supervenit brachiorum resolutio.

Consultitur medicum utique doctum et expertum, qui nihil non adhibet quod artis est ad hunc morbum curandum, scilicet venæsectiones, vesicantia, verberationes urticis, cucurbitulas, embroche calidum et frigidum, optima antispasmodica, roborantia, unguenta acria et stimulantia, fonticulos; neque tamen valet restituere motum artubus inferioribus, superiores enim inde vigorem recuperabant
pristi-

pristinum; unde mœrore et tædio affecta omnibus remediis valedicit; fortem patienter latura. Hoc modo autem tolerantes fellæ ut machina quæ ope et elatere indiget, si movere vult, affixa per aliquot annos, satis bene ceteroquin, circa finem Decembris 1785 annum ætatis adimplens decimum octavum, corripitur febre tertiana regulari, quando meum auxilium petitur. Cum vero ex relatis crederem hanc febrem haud inutilem fore ad paralyfim extremitatum solvendam, evacuanti-
bus tantum utendum esse puto, donec aliquot passa esset paroxysmos; atqui tam molesti hospitis pertæsa, intense præcabatur ut ad acheronta eum quantocius relegerem. Ideo præscribo tantî usus, ac forsan nunquam satis laudandum in hoc affectu, corticem Peruvianum dosi ordinaria: Sed quamvis statim temporibus accurate atque exacte hoc præbium usurparetur, febris tamen de tertiana fiebat quotidiana; indeque accedo ad vires Gei urbani tentandas, cui quoque febris resistens in quartanam mutabatur, quæ nec unciis quinque Gei cedebat.

Nunc vero in usum vocabam in quartano adeo laudatam Arnica formula sequenti :

℞ Flor. Arnici, ʒi. coq. in aq. puriss. ℥ij. ad remanent ℥i. col. add. sal. ammon. ʒiii. fyr. quinque rad. aper. ʒii. M. cujus decocti hauriendus erat parvus cyathus omni trihorio.

Priori præbio assumpto, post horæ quadrantem oppressiones oriebantur, pectoris cum anxietatibus, et doloribus in infimo ventre, nec non cephalalgia. Pulsus fiebat celer, concomitante nausea. Verum enimvero nec inde territus, suadeo ne ab ulteriori remedii usu desistat; illaque alacriter alteram haurit dosin, quæ, in minori gradu quamvis, excitaverat vi sua activa cardialgiam, cum calore totius corporis. Ad tertium præbium autem tolerabiliora fiebant symptomata, et dimidia hora elapsa post quartum præbium sentit fluidum quid effluere e vagina; indeque animo attento ac anxio quærens quid esset, en non sine admiratione sanguinem vidit ex virginitatis antro prodire, qui forsan nunquam antea in amabili sexu quam in nostra cum tanta utilitate fluxit. Nam eo ipso momento temporis sentiebat, quadam titillatione et fornicatione circa tibiam, se pedes et crura habere. Insequenti die eosdem extendere valebat, ac demum tertio die incedebat saltabatque.

que more aliarum virginum gaudentium cruribus firmis. Nec tamen statim ab usu decocti arnicæ discedebat. Febris ab eo quoque tempore non rediit. Brevi autem post remedio valedicens, mensium vero periodo regulari utique gaudet.

CORROLARIA.

Nervorum debilitatem, indeque insequentem majorem sensibilitatem, plurimum contribuere ut quædam in talibus subjectis vehementius operentur quam in aliis, non est quod præcipue ab hoc casu demonstrare conatus sum utpote nimis notum et triviale. Sed quod indicare volo est, quod causæ allatæ possint contribuere ut eadem subjecta nunc minus nunc magis ab uno eodemque objecto afficiantur. Viderat enim hæc virgo tales scenas aliquando, non sine horrore quidem sed nunquam tali cum eventu ac hac ultima vice, cujus causâ absque hæsitantia ex choreis prægressis nimiam lassitudinem et majorem debilitatem inducentibus deducere licet. Haud inficias ibo, hominibus debilioribus

2

corporis

corporis motum conducere quo roborantur fibræ musculares nervorumque systema, indeque sanguinis circulationem humorumque secretiones et excretiones haud satis regulares forsitan in similibus ad meliorem reducuntur ordinem. Equidem haud negandum est saltus et tripudium inter corporis motus recensenda; ac facillime præ aliis ob oblectamentum quod afferunt præferenda: sed modus, quo nostris temporibus choreæ ducuntur, nunquam sanitati conducere potest, dum fit nimia vehementia, diuque nimis protrahitur, in conclavibus nimis calentibus, candelarum fumo et hominum vaporibus repletis, indeque sudor manat lassans, vicissim et alternatim repulsus, iterumque corpore fluens, non sine sanitatis detrimento nervorumque debilitate; inde, uti opinor, nostra magis ab hac tristi scena afficiebatur quam alias.

Nec est quod dubitemus arnicam in minori dosi, quamvis ac per aliquot vices usurpatam, sanitatem nostræ restituisse. Tensiones, anxietates, palpitationes cordis, cephalalgia, calores et dolores in infimo ventre, satis testantur de efficacia hujus remedii qua egit in omnia vasa ac distenderit uterina. Hoc-

que modo vias aperuerit diutius forsan eman-
sæ jamjam vero prodituræ menstruationi *.
Nec incredibile mensium profluvio artuum
paralyfin solutam fuisse †. Sensum formi-
cationis in cruribus sensu semper carentibus,
nunquam calentibus, ipso tempore quo men-
ses prorumpebant, monstrat et vasa cruralia
spasmodice contracta, modo jam dilatari vi-
amque patulam sic sanguini fluenti pandi.

Num vero febris fuerit naturæ conamen
ad promovendam menstruationis negotium,
verisimili fatis videri potest; quamvis mea
ex sententia, hoc negandum puto, dum sep-
tem paroxyfmi ante febrifugorum usum, cæ-
terique scil. horum usum nullum symptoma
ceu mensium prodromum excitarunt ante
arnicæ assumptionem, a qua abdominis cru-
ciatus cætera sequebantur.

S E C T.

* In mensium suppressione, horumve obstructione, com-
mendat de la Marche.

† Arnicæ in paralyfi virtutem, multis experimentis, in
quamplurimis ægrotis institutis, probat Clar. Collin. In
paralyfi artuum inferiorum ex pondere dorso illapso opem
tulit et infusum florum ingestum et cataplasma ex floribus
paratum, referente Plenquio.

S E C T. III.

MEDICAL NEWS.

* * * *

ABOUT the beginning of February last, the College of Physicians of Philadelphia published the following account of their establishment and constitution.

“ The physicians of Philadelphia, influenced by the conviction of the many advantages that have arisen in every country from literary institutions, have associated themselves under the name and title of The College of Physicians of Philadelphia.

“ The objects of this College are to advance

the science of medicine, and thereby to lessen human misery, by investigating the diseases and remedies which are peculiar to our country; by observing the effects of different seasons, climates, and situations, on the human body; by recording the changes that are produced in diseases by the progress of agriculture, arts, population, and manners; by searching for medicines in our woods, waters, and the bowels of the earth; by enlarging our avenues to knowledge from the discoveries and publications of foreign countries; by appointing stated times for literary intercourse and communications; and by cultivating order and uniformity in the practice of physic.

“ For the purpose of obtaining these objects, the following rules have been adopted.

“ 1. The College shall consist of twelve senior fellows, and of an indefinite number of junior fellows and associates.

“ 2. The senior and junior fellows shall reside in the city and district of Southwark, or liberties of Philadelphia.

“ 3. The associates shall consist of persons of merit, in the profession of medicine, who do
not

not live within the limits described for fellows, without any regard to diversity of nation or religion.

“ 4. The junior fellows shall consist of such practitioners of physic as are of good capacity, of good moral character, and decent deportment, and who are not under twenty-four years of age.

“ 5. The senior fellows shall be chosen from among the juniors by the seniors only, within one month after a vacancy is declared. The junior fellows and associates shall be chosen by the joint votes of all the fellows. Three-fourths of the whole number of senior fellows shall concur in the admission of seniors, and three-fourths of the fellows shall concur in the admission of juniors and associates.

“ 6. All laws, regulations, and appointments to offices, shall be made by a majority of the joint votes of all the fellows.

“ 7. The officers of the College shall consist of a president, vice-president, four censors, a treasurer, and secretary ; who shall be chosen annually from among the senior fellows, on the 1st Tuesday of July.

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“ 8. The

“ 8. The stated meetings of the College shall be on the first Tuesday of every month. Besides these meetings, the president, or, in his absence or indisposition, the vice-president, shall have power to call extraordinary meetings whenever important or unexpected business shall require, of which he shall be judge. It shall likewise be in the power of any six fellows of the College who concur in their desires of a meeting, to authorise the president, or, in his absence or indisposition, the vice-president, to call it.

“ 9. The business of the censors shall be to inspect the records, and examine the accounts and expenditures of the College, and to report thereon. And all communications made to the Society, after being read at one of their stated meetings, shall be referred to the censors, and such other members of the College as shall be nominated for that purpose, to examine and report thereon to the College; who shall determine by a vote taken by ballot on the propriety of publishing them in their transactions.

“ 10. The business of the secretary shall be to keep minutes of all the meetings and transactions

actions of the society, and to record them in a book provided for that purpose; and likewise to receive and preserve all books and papers belonging to the College, and letters addressed to them.

“ 11. The business of the treasurer shall be to receive all the moneys of the College, and to pay them to the order of the president or vice-president only; which order shall be the voucher of his expenditures.

“ 12. Every member of the College shall have a certificate of his election, with the seal of the College affixed thereto, signed by the president and vice-president, and countersigned by the censors and secretary. The style of all certificates, and of all addresses from the College, shall be as follows: The President (or Vice-President), and College of Physicians of Philadelphia.

“ 13. No associate who comes to reside within the limits mentioned in the second rule, shall be admitted to a fellowship in the College, without being elected in the manner prescribed for the admission of junior fellows. No new member shall be chosen who has not been proposed at a previous stated meeting.

“ 14. No law or regulation shall be adopted that has not been proposed at a previous stated meeting : Nor shall any part of the constitution be altered, without being proposed for consideration for three months. The president, or vice-president, when he takes the chair, shall have no vote, except in questions where there is an equal division of voices. Two-fifths of the fellows shall be a quorum for all business, except the election of members, the expenditure of money, the making of laws, or the altering of the constitution. In all these last cases, a majority of fellows shall be a quorum.

“ 15. Every fellow, upon his admission, shall subscribe to the above rules, as a testimony of his consenting to be bound by them. He shall, at the same time, pay into the hands of the treasurer the sum of eight dollars, towards establishing a fund for the use of the College. He shall likewise pay two dollars annually for the same purpose.

“ The following physicians are the present members of the College :

SENIOR

SENIOR FELLOWS.

John Redman	Abraham Chovet
John Jones	John Morgan
William Shipper, jun.	Adam Kuhn
Benjamin Rush	Gerardus Clarkson
Samuel Duffield	Thomas Parke
James Hutchinson	George Glentworth,

JUNIOR FELLOWS.

Robert Harris	John Carlson
Benjamin Duffield	Will ^m . W. Smith
John Foulk	Samuel P. Griffiths
James Hall	John Morris
Andrew Rose	W ^m . Clarkson
W ^m . Curry	Benjamin Say.
John Lynn	

“ All communications that are included in the objects of the College, specified in the preamble of the constitution, may be addressed to the secretary (post paid when they are sent by that conveyance), or to any other fellow of the College.

“ It is to be hoped the friends of medical
science

science in every part of the United States, will concur in promoting, by useful communications, the important designs of this institution.

Published by order of the College,
JAMES HUTCHINSON, *Secy.*"

The present officers of the College are,

John Redman President

John Jones Vice-President

W^m. Shipper, jun.

Benjamin Rush

John Morgan

Adam Kuhn

} Censors.

Gerardus Clarkson Treasurer

James Hutchinson Secretary,

* * * *

The following remarkable circumstance has been communicated to us from a surgeon in the country. Whether there has been any deception with respect to it, we will not pretend

tend to say ; but we trust that our readers will excuse us for presenting to them the account that has been transmitted to us.

A woman, in the 64th year of her age, who had been long married, but who never had any children, became affected, about 20 years ago, with different stomach complaints. Her appetite was at times uncommonly keen ; but she was particularly distressed with severe thirst, in so much that she was often under the necessity of drinking five or six quarts of water, or similar fluids, in the course of a day. She was, however, free from any fever ; her belly was regular, and her urine in the usual quantity. She had used a great variety of stomachic medicines, but without deriving any benefit from them. Her complaints increased to such a degree that she was confined to bed. After she had been so for about eighteen months, a dose of the *pilulæ mercur. laxant.* was given her. In the pot which she used during its operation, a substance was observed, which, when examined, was found to be an entire animal ; and it in every respect resembled a common snail, freed from

from its shell. This substance she is herself very confident that she discharged by stool. Some weeks afterwards another animal of the same kind was also observed in the pot she used; and this she is likewise convinced was discharged in the same manner.

* * * *

A learned and ingenious physician in England, in a letter to Dr Duncan, gives the following account of the effects he has obtained from expressed oils taken internally for medical purposes.

“ I am trying the effects of expressed oils on the human system. The *oleum amygdalarum*, and the *oleum lini sine igne*, I find to be very useful medicines: for when they agree with the stomach, they are pretty certainly laxative, without griping. In this manner they are highly useful in the piles attended with constipation; and they will essentially

essentially relieve not only recent, but some very obstinate, coughs, when other medicines have failed. I say when they agree with the stomach; for not unfrequently a sickness and regurgitation will make a part of their operative effects for some hours after each dose. This disagreement with the stomach depends so much upon idiosyncrasy, that when it happens I have been obliged to lay them aside, after trying them repeatedly even in the smallest doses. On the other hand, in stomachs less delicate, and not affected from such a peculiarity, I can generally administer almost whatever quantity I please without the least inconvenience. My general doses are from half an ounce to an ounce of the pure oil, three times a-day; which may be still enlarged if needful. I give them either simple or combined with an equal quantity of common distilled water, by adding ten or twenty drops of the spiritus volatilis aromaticus to each dose. This preparation will fit easily on the stomachs of some patients, when the simple oils will not. I find that the oleum amygdalarum agrees in general much better than the oleum lini. But the latter is more
laxa-

laxative, and I think its curative effects are more pointed.

Of late I have made some trials with what Dr Ruty calls the *oleum sinapinum*, or the expressed oil of mustard-seed, in a few rheumatic cases; but without any obvious relief. I find it to be laxative in a slight degree, somewhat similar to the *oleum olivarum*. My plan of trying the effects of medicines being much the same as if I had no previous knowledge of them, will not allow me at present to make farther observations on these articles with confidence. But hereafter I hope to give you more useful remarks.

* * * *

The lymphatic vessels have lately been injected with uncommon success at Dr Monro's anatomical theatre in Edinburgh. One preparation, particularly, shows a much greater number of large lymphatics, or what may be called trunks of these vessels, both in the su-
perior

perior and inferior extremities, than are delineated in any of the best anatomical plates on that subject which have hitherto been published. Dr Monro has been at very great pains in having accurate drawings made of these vessels, after careful dissection: And it is to be hoped, that he will soon communicate to the public the light which has thus been thrown on this branch of anatomy.

* * * *

At the last meeting of the Harveian society of Edinburgh, instituted in honour of Dr Harvey, and held annually on the anniversary of his birth-day, Dr Webster delivered a discourse on the life, writings, and character, of the late Dr John Gregory, professor of the practice of medicine in the university of Edinburgh. After this, the annual premium given by the society was publicly delivered to Mr Benjamin Smith Barton of Philadelphia; who was found to be
the

drams of this extract, in a state apparently pure, five drams of a gummy matter and two of a resinous substance, will, at a medium, be obtained. He has found, that in this quantity, even of the best extract, from three to four drams of a feculent matter, is still contained. And he has also demonstrated, that in all pharmaceutical trials, where any evaporation can take place, a considerable portion of the most active part of the plant is lost.

He next proceeds to determine its effects on the system of man and of other animals. And here, from a series of experiments ingeniously devised and carefully executed, he has been able to present us with an accurate account of the influence, not only of the extract in general, but of its gummy and resinous parts in particular, on the living body. These experiments, which were begun upon himself, and confirmed by similar trials on others, clearly prove the sedative power of this substance. For the name of sedative may unquestionably, with the strictest propriety, be affixed to a substance which has undeniably the effect of diminishing the celerity

and impetus of the motion of the blood, and of inducing a state of sleep, the grand composer of nature. In one instance only, during the course of his experiments, did he find, that very soon after the hyosciamus was exhibited, the celerity and fulness of the pulse were a little increased. But in that case, the resinous part of the hyosciamus was exhibited dissolved in alcohol; and trials afterwards made, left no room for doubt, that this effect on the circulation was to be attributed to the ardent spirit alone.

Without attempting to give any farther account of the different facts discovered by Mr Barton's experiments, we shall only show the extent to which they were carried, by relating a single experiment, which demonstrates in the clearest manner the active powers of this article.

Four grains of the resinous part of the extract of hyosciamus united with twelve of the extract of liquorice, were given to a vigorous man in the 24th year of his age. In twelve minutes after it was taken, its effects first became obvious by a slight diminution of the celerity of the pulse. From this time it became

came gradually more flow and feeble, till, within the space of little more than an hour, it had sunk from eighty-five to fifty-nine strokes only in the space of a minute; and it had at the same time become very small. During this progress, the countenance became gradually pallid; vertigo ensued, with dimness of sight; sickness at stomach was succeeded by vomiting; and universal debility supervened, attended with trembling of the whole body, and remarkable coldness of the extremities, till at length even deliquium animi took place. In this state it was thought advisable to terminate the experiment, by having recourse to the volatile alkali and a glass of spirits. This soon enabled him to walk out into the open air: But for some days afterwards food was difficultly retained on his stomach, and several loose stools were the consequence of the medicine.

This quantity then of the resinous part of the hyosciamus, at least with those not habituated to the use of it, was even beyond the maximum dose, for useful purposes. This experiment clearly proves, that those deleterious effects even to the human species, which

have been attributed to this vegetable, have not their foundation in popular prejudice, but in fact : And when contrasted with the other trials, of which an account is given in Mr Barton's essay, it demonstrates the truth of what has lately been asserted by an eminent English physician, " Poisons in small doses " are the best medicines, and the best medicines in large doses are poisonous."

We shall not at present enter any farther into the different particulars contained in this dissertation ; but shall conclude with observing, that from the facts here brought to light, there is reason to infer, that hyosciamus will not only furnish an excellent substitute for opium, perhaps the most important article with which the materia medica has yet been enriched, but will also in certain cases enable us to obtain most, if not all, the good effects to be derived from that valuable medicine, without those inconveniences of which, in certain constitutions, it is known to be productive. And we have little doubt, that by means of this too-long neglected vegetable, growing with spontaneous luxuriance in almost every part of our own island, the calamities

calamities and sufferings of the human species may in many instances be successfully alleviated and removed.

After the delivery of the prize for 1786, the subject announced for the prize-dissertations of 1787, was an experimental inquiry concerning the chemical and medical effects of those substances called Lithontriptics, particularly their effects on the human calculus. It is not here expected, that the experimenter should turn his attention to every insignificant article which has been supposed to possess the power of dissolving calculi. The reputed lithontriptics to which it is wished that candidates should chiefly turn their attention, are the acids, especially the aërial and the mineral acids; and also the alkalis, both in their mild and caustic state. On this subject, the late experiments of Scheele and Bergman, ascertaining with greater precision than had before been done, the real constituents of the human calculus, cannot fail considerably to aid the investigation. But although much has already been done, yet much still remains to be ascertained, much to be discovered; and a certain degree of success, at least,

can hardly fail to reward the labours of every diligent inquirer.

But while lithontriptics were proposed as the subject of prize-dissertations for 1787, a subject of investigation was also proposed for 1788, which affords ample scope for the exertions of ingenuity, of judgment, and of industry: An inquiry, viz. into the nature and properties of the *Nicotiana Tabaccum* of Linnæus, into the different active constituent parts of this vegetable, their effects on the human body, and their use in the cure of diseases. On this subject also much has been done with success. While the celebrated Fontana has shown that the oil of tobacco is one of the most active poisons in nature, and that too even in consequence of the slightest impression to a recent wound, the industrious Dr Fowler has demonstrated that this vegetable furnishes us with one of the most effectual remedies in the cure of dropsies. Their labours, however, in place of exhausting the subject, have merely pointed out what yet remains to be discovered, and have opened to the view of future inquirers a mine from whence medicine may be enriched.

Dis-

Dissertations on the first of these subjects must be transmitted to Drs Duncan or Webster by the first of January 1788, and on the last by the first of January 1789. Each dissertation must be accompanied with a sealed letter, containing the name of the author, and bearing the same motto with the dissertation.

* * * *

The Royal Medical Society of Edinburgh have distributed the following program respecting their prize-medal.

“ *Societas Regia Medica Edinensis, Rei philosophicæ incumbens, S. et O.*

“ Cum ea sit *Academiarum*, quæ per philosophicam late rempublicam hodie increbrescunt præcipua mens et consilium, ut omni qua possint opera, scientiis promovendis adlaborent, nihil se præsentius præstatu-
ros existimarunt, quam si positus in medio præmiis æmulos eruditorum conatus accenderent. Ne

igitur in studiis nos communibus obmutescere videamur, quæstionem quotannis palam proponere decrevimus quam ea qua par est industria excussam præmio condecorabimur. Inter plurimas autem easque gravissimas quæ nuperis annis agitatae fuerunt quæstiones, nulla philosophorum ingenia magis exercuit, quam quæ varias aërum species earumque proprietates explorabat. Attamen, quum ipsarum nondum penitiorem indolem introspiciamus, parumque constat quid eæ, quam præcipue colimus scientiæ, utilitatis sint allaturæ, quæstionem hanc publici juris faciendam hodie censuit Societas :

“ Quot sunt aërum species? Quænam singularum natura et in medicina vires?

“ Cum nulla hodiernis chemice philosophantium laboribus magis consentiat, non pauca ut speramus neque ea poenitenda futura sint, quæ hac in re experimenta instituentur.

“ Quemcunque vero hujusce præmii honorem, conscia mens facultatum ambire suaferit, dissertationem suam Anglicè, Gallicè, vel Latinè conscriptum, ante Calen. Jan. 1789, Edinam ad eos qui ad acta edenda a secretis fuerint,

mit.

mittendam curabit, addita simul chartula nomen domiciliumque indigitante, eodemque sigillo et symbolo, quo dissertatio ipsa munita. Qui quæstionem propositam ex judicio arbitratorum optime enucleaverit numismate pretio viginti aureorum Anglicorum remunerabitur. Quæ autem dissertationes Societatis non æque votis respondent, exeunte anno, si ita auctori visum fuerit intactæ igni tradendæ sunt.”

* * * *

The Medical Society of London, instituted in the year 1773, in order to excite practitioners to bring those talents to light which would otherwise lie buried and useless to the community, proposed, on their first institution, to hold forth honorary rewards to those who should improve the medical art. And they resolved to give a silver medal annually to the author of the best memoir that should be communicated within the year. This was

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to be decided by the Fellows of the Society ; who being judges of the merit of competitors, cannot be candidates for the prize.

Besides this, Dr Lettsom, a worthy and zealous member of the Society, has also vested in the public funds a sum of money sufficient to enable the Society to give annually a gold medal of the value of ten guineas, subject to the following regulations.

Regulations respecting the gold medal, founded in commemoration of Dr John Fothergill.

1. That the medal be given annually to the author of the best dissertation on a subject proposed by the Society ; for which the learned of all countries shall be invited as candidates.

2. Each dissertation shall be delivered to the Secretary, written in a legible hand, in the Latin, English, or French language, at least two months before the meeting for adjudging the medal.

3. With it shall be delivered a sealed packet, with some device on the outside, and within the author's name and designation.

“ 4. The

4. The same device shall be put on the dissertation, that the Society may know how to address the successful candidate.

5. There shall be a committee appointed by the Society, for the purpose of adjudging this medal, consisting of the council; to whom shall be joined such other members as the Society shall think proper; and their sentence shall be final.

6. The medal shall be adjudged on the eighth day of March, that being the birthday of the late Dr Fothergill. The first medal shall be adjudged in the year 1787.

7. No dissertation with the name of the author affixed can be received, that the committee may decide on the merits of each, without any knowledge of, or partiality for, the author.

8. All the dissertations, the successful one excepted, shall be returned if desired, with the packets unopened, which contain the names of the authors.

The following question was proposed as the subject of the first prize.

What diseases may be mitigated or cured
by

by exciting particular affections or passions of the mind?

The prize for this question was adjudged in favour of Dr William Falconer of Bath, corresponding member of the Medical Society.

The following question is proposed as the subject for the prize-medal for the year 1788 :

How is the human body in health and in a diseased state affected by different kinds of air?

And for the year 1789, the following question is proposed :

What circumstances accelerate, retard, or prevent the progress of infection?

The meetings of this Society are held in a spacious house in Bolt Court, Fleet-street, which was generously given them by Dr Lettsom, as well as the patronage of the Fothergilian medal. The society consists of physicians, surgeons, and apothecaries, divided into fellows, corresponding members, and candidates. The number of fellows is restricted to thirty in each branch of the profession, who alone direct the affairs of the society, and who must be settled in business
either

either in the city of London, or within seven miles of it. When any one of the three classes has thirty fellows, those of that profession who may desire to become members, can be admitted only on the list of candidates. But the number of these, as well as of the corresponding members, is unlimited; and no person is eligible, as a corresponding member, who resides within seven miles of London.

The Royal Academy of Sciences at Bourdeaux have conferred a prize on Mr Permentier, for having furnished them with the best solution of the following question :

Quelle seroit le meilleur procédé pour conserver le plus long tems possible, ou en grain ou en farine, le Mais ou blé de Turquie? Et quels seroient les differens moyens d'en tirer parti dans les années abondantes, independamment des usages connus et ordinaires dans cette province?

Of this question Mr Permentier is said to have furnished the Society with an excellent solution; and it is now, we are told, published, with many important additional observa-

tions respecting the natural history and culture of the plant.

The Royal Academy of Sciences at Brussels have proposed the following prize question for the year 1787:

“Optat Academia, ut quum *Melolontha vulgaris*, five *Scarabæus melolontha* Linn. præsertim ejusdem larvæ, tam copiose multiplicentur, magnasque clades in arvis producant, remedia tuta atque probata inveniantur indicenturque, quibus hæc insecta facillime, minimisque sumptibus, in diversis metamorphoseos statibus imminui vel eradicari queant.”

The Royal Society of Sciences at Copenhagen have lately proposed three prize questions in the following terms:

“*Imo*, Certis experimentis gravibusque argumentis declaratum dare, Utrum corporum calor sit effectus materiæ calefacientis in corporibus calidis obviæ neque ad corporum substantiam pertinentis, an certus motus particularum corpora constituentium, adeoque tantummodo quædam modificatio?

“*2do*, Theoreticam explicationem optimæ aratri fabricæ pro agrorum diversa indole, diversoque situ.

“*3tio*,

“3tio, Ut distincte accurateque determinentur plantæ, tum in littore maris, tum in aliis Daniæ regionibus crescentes, quarum usus sit ad arenam volantem quam vocant coercendam, ita ut uniuscujusque plantæ figura laudetur aut in flora Danica, aut si ibi deficiat, aliis in bonæ notæ libris, una cum fructificationis partibus obvia.”

The Academy of Dijon, some time ago, proposed the following prize-question:

“Quatenus Phlogiston differret a materia caloris?”

As they have not received a satisfactory answer, it is again proposed to the consideration of the learned competitors for this prize, which is now a double one. Competitors must transmit their dissertations to the secretary of the society before the first of April 1789.

The society of Leipzig have again repeated the following prize-question, which they had formerly proposed.

“Exponatur Hygrometriæ historia, a prima ejusdem disciplinæ origine ad hæc usque tempora, simulque instrumenta indicentur eaque quæ ad perficiendam hanc disciplinam etiamnum restant, enumerentur.”

They have also proposed the following question : “ *Phænomena electrica ex reciproca actione duarum sibi oppositarum materierum electricarum, earumque varias relationes ad alia corpora, experimentis explicentur et comprobentur ; infimulque hæc hypothesis cum aliis præsertim cum Frankliniana comparetur.*”

Dissertations on these subjects must be transmitted to Professor William Aug. Ernesti before the first of January 1788.

On the 15th of July 1786, a meeting was held of the Royal Society of Gottingen, which their Royal Highnesses Prince Ernest Augustus and Adolphus Frederic, sons to his Britannic Majesty, honoured with their presence. Seven dissertations were considered which had been transmitted to the Society on a question formerly proposed, respecting the most healthful construction of villages. The first prize was adjudged to a dissertation which had for its motto, “ *Lorsque l’on veut changer les mœurs,*” &c. And upon opening the sealed letter which accompanied it, the author of it was found to be Nicolaus Beckman of Harburg, member of the Societies of Gottingen, Brunswick, and several others. The
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accesfit was adjudged to a dissertation which had for its motto, “*Lasset uns wirken weil es Tag ist.*” But the Society will not publish the name of the author without his consent.

The Royal Academy of Sciences and Belles Lettres at Nancy, have proposed an extraordinary prize, founded by M. de la Porte, intendant of the province of Lorraine, for the best solution of the following question :

1mo, Y a-t-il des signes certains de l'existence d'une mine de trouille ou charbon de terre dans un terrain quelconque ?

2do, Quels sont les cantons de Lorraine ou l'on peut presumer qu'il existe de ces mines ?

3tio, Quelle seroit la methode la plus facile et la moins dispendieuse d'en constater la decouverte ?

The prize is twenty-five Louis d'ors, and will be determined on the 8th of May 1788.

The following prize questions have some time ago been proposed by the Royal Society of Medicine at Paris.

Determiner quelles sont les circonstances les plus favorables au developpement du vice scrophuleux, et rechercher quels sont les moyens soit dietetiques soit mèdicinaux d'en retarder

les progrès, d'en diminuer l'intensité, et de prévenir les maladies secondaires dont ce vice peut être la cause.

The prize is six hundred livres.

Determiner, par l'examen comparé des propriétés physiques et chimiques, la nature des laits de femme, de vache, de chèvre, d'âne, de brebis, et de jument.

The prize is twelve hundred livres.

Determiner, *1mo*, s'il existe des maladies vraiment héréditaires, et quelles elles sont; *2do*, s'il est au pouvoir de la médecine d'en empêcher le développement, ou de le guérir après qu'elles se sont déclarées.

The prize is six hundred livres.

Dissertations on these subjects must be transmitted to the Society by the first of January 1788.

Determiner quelles sont les maladies dont le système des vaisseaux lymphatiques est le siège; c'est-à-dire, dans lesquelles les glandes, les vaisseaux lymphatiques, et le fluide qu'ils contiennent, sont essentiellement affectés; quels sont les symptômes qui le caractérisent, et les indications qu'elles offrent à remplir?

The prize is six hundred livres.

Determiner

Determiner par l'observation, quelles sont les maladies qui resultent des émanations des eaux stagnantes et des pays marecageux, soit pour ceux qui travaillent a leur dessèchement, et quels sont les moyens de les prevenir et d'y remedier ?

The prize is fix hundred livres.

Memoires on these two last subjects must be transmitted to the Society by the first of January 1789.

The Royal and Imperial Academy of Sciences and Belles Lettres at Brussels, have again repeated a question formerly proposed by them.

Quels sont les moyens que la médecine et la police pourroient employer pour prevenir les erreurs dangereuse des enterremens precipites ?

They have also proposed the following question :

Quels sont les végétaux indigènes propres à fournir des huiles qu'on pourroit substituer avec succes et sans danger à l'huile d'olive ? Quelles sont les methodes de prepare et de conserver ces huiles ? Enfin, quel sera leur

prix, en supposant un prix donné des matiers dont on les tires ?

Each prize is a gold medal of the value of twenty-five ducats ; and memoirs on these subjects must be transmitted to M. des Roches, Secretary of the Academy, by the 16th of June 1788.

The Royal Academy of Sciences at Paris proposed in 1787 the following prize question :

La recherche des moyens par lesquels on pourroit garantir les broyeurs de couleurs des maladies que les attaquent frequemment, et qui sont la suite de leur travail."

Nothing sufficiently explicit having been presented on this important subject, the question is again repeated, and a double prize offered, amounting to 2160 livres.

The dissertations of competitors for this prize must be transmitted to the Secretary by the first of February 1789.

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In the fourth volume of these Commentaries, published about ten years ago, we mentioned a work which then made its first appearance, and which has since attracted the attention of almost every philosopher in Europe. We mean the celebrated work of Mr Lavater on physiognomy.

This work, by means of the original German, and through the medium of the French edition, has been very much the subject of conversation among the British philosophers. But it has never hitherto appeared in an English dress. Proposals, however, have lately been circulated for publishing an English translation of it by subscription at London. The engravings are to be executed by Mr Thomas Holloway, and the translation by the Rev. Dr Henry Hunter. It is therefore to be hoped, that the whole will be executed in such a manner as to do credit to the ori-

ginal. And if this be the case, it will have a just claim to no inconsiderable share of the public attention. To give our readers some idea of the nature and tendency of this work, we shall present them with the following passage, extracted from an address to the public, which the English editor has annexed to his proposals.

“ The professed aim of this curious, entertaining, and instructive work, is to promote the knowledge and the love of mankind. The plan of it is perfectly original, and the subject universally interesting and important. In the execution, there are incessantly discovered marks of an enlarged mind, a penetrating genius, an ardent and pious spirit, a warm and benevolent heart. The style of the author is elegant, correct, and perspicuous: His figures, of which he makes abundant use, in general just, bold, and striking: His sentiments frequently noble and sublime.

“ To various descriptions of readers the editor flatters himself the translation and embellishments of these singular essays will be highly acceptable. Artists, in all the branches of design, will be furnished with innumerable

able hints respecting the principles and improvement of their art. The philosopher will find himself conducted into a new, extensive, and useful field of speculation. Mr Lavater's fragments, as he modestly calls them, afford a rich repast to the lovers of polite learning, who will be supplied with ample matter to exercise, to gratify, perhaps to correct their taste. To the friend of virtue, it must yield heart-felt satisfaction to meet with another generous manly spirited attempt, to promote the cause of humanity, goodness, and truth: While the man of piety will rejoice in the animated and affecting views which are continually presented of the Great Creator's power, wisdom, and beneficence.

“ The daring spirit of Lavater, it is acknowledged, frequently hazards a flight, which the calm and timid will be apt to tax with rashness and extravagance. But the very wildness and excentricity of genius, please infinitely more than all the frigid laborious correctness of phlegm and apathy.

“ Neither the author nor the editor pretend to offer this to the public as a perfect

and finished work. They are abundantly sensible that the science of physiognomy is yet in its infancy : but they are confident it is a subject of successful though difficult investigation. The learned, acute, and enterprising Swifts, has made a respectable beginning, and a meritorious progress. Why may it not be reserved for British ingenuity, spirit, and perseverance, to complete his design, to supply the materials which are still wanting, to clear away what may be found superfluous, and to rear the fabric to its highest possible pitch of beauty, solidity, grandeur, and usefulness ?”

It is proposed that this work shall be printed in numbers, at 12s. each to subscribers. It is intended that the first number shall appear on the 1st of January 1788 ; and it is computed that the whole will be comprised in forty numbers, which will make four magnificent volumes in 4to.

We

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In our last volume we mentioned, that the College of Physicians in London had in contemplation the reformation of their Pharmacopœia; and it is with much satisfaction we can now add, that very considerable progress is made in that work. In August 1786, the Committee appointed by the College for the purpose of revising their Pharmacopœia, printed a sketch of a future edition of that book. This was submitted to the judgment both of their own members and of others; particularly of several members of the society of Apothecaries. In the advertisement prefixed to this sketch, they request that any observations or proposals for the improvement of it, should be transmitted to Mr Ker beadle of the College of Physicians, on or before the 18th of October 1786.

After receiving and duly considering all the information thus obtained, the College
have

have lately printed a second specimen, under the title of *Pharmacopœiæ Londinensis Specimen alterum*. While the former specimen might justly be considered as containing many important alterations of their present *Pharmacopœia*, which has received no revival since the year 1745, there can be no doubt that this second specimen appears with a very considerable additional number of useful improvements. Into any minute comparison, however, of the two specimens, we cannot here propose to enter. We shall only observe, that it could hardly fail to be an object with the College, to substitute, in place of the unmeaning and often absurd names formerly employed, such terms as would serve to convey a proper idea of the substance to which they were appropriated. Accordingly both specimens begin with an *Index Nominum mutatorum*. In the first specimen they propose a change of about fifty names; but in the second specimen, the number of terms proposed to be changed amounts to near one hundred and fifty. Although these numerous changes may at first be productive of some inconvenience, particularly to those who
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are averſe to all trouble ; yet it cannot be a matter of doubt, that almoſt every one of the intended alterations will not only convey uſeful information to the apprentices of apothecaries, a claſs whom it is highly neceſſary to inſtruct ; but will alſo greatly aſſiſt the memory even of the moſt learned members of the profeſſion. And by theſe alterations the language of pharmacy will be rendered much more conſiſtent with the principles of ſound chemiſtry and of common ſenſe. On this ſubject we are even inclined to think that the College might have gone ſomewhat further with advantage. Thus they have ſtill retained the name of *Terra Japonica*, although it be well known that the ſubſtance thus denominated is a vegetable extract, and that the earth which it too often contains is merely an accidental impurity. Accordingly, in the laſt edition of the *Pharmacopœia Suecica*, and in ſome other of the moſt approved modern *Pharmacopœias*, it has the name of *Catechu vel Succus Japonicus*.

But while in this ſecond ſpecimen many uſeful alterations are propoſed with reſpect to names, changes ſtill more important, reſpecting

specting the preparation and composition of different articles, are proposed in every part of the work. And it is earnestly to be wished, that the College may, without delay, give their sanction to a work from which the practice of medicine in Britain must derive many advantages; and that the public may soon be favoured with it under the form of a new Pharmacopœia published by authority.

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A new edition, being the third, of Dr Swediaur's Practical Observations on Venereal Complaints, is in the press here, and will very soon be published. This edition, we are informed, will appear with many corrections and additions; and particularly, a supplement is to be added to it, containing a new plan for a Pharmacopœia Syphilitica. In this, not only the simples, but likewise all the preparations and compounds hitherto known
to

to be useful for the cure of venereal complaints, are exhibited in formulas.

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We formerly announced, that Dr Cullen had an intention of publishing a Treatise on the Materia Medica. And we are happy to be able to inform our readers, that the work is now actually in the press. But from the author's numerous engagements, particularly at this season, it is hardly to be expected that it will be ready for publication for some months to come.

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We once flattered ourselves, that we should have been able to introduce into our list of new publications for this year, Mr Smellie's
Philosophy

Philosophy of Natural History, with a short enumeration of the contents of which we presented our readers in our last volume: But although the publication has been retarded longer than was expected, yet it has now made a very considerable progress, about one half of the work being printed off.

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Dr Monro's work on the *Bursæ Mucosæ* in the human body is now in the press, and will in all probability be ready for publication by the end of the ensuing winter.

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The anatomical plates by Mr Andrew Bell, engraver to his Royal Highness the Prince of Wales for Scotland, have made considerable

able progress since we last mentioned them. Of two hundred and forty, which it is computed will be necessary to comprehend the whole system, one hundred and fifty-three are already engraved. The first and second parts of this work, comprehending the plates of the bones and muscles, are already published; and the third part, which will occupy about sixty plates, will, it is imagined, be published in March next.

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A new edition of Dr Gregory's *Conspectus Medicinæ Theoreticæ* is almost entirely printed off, and will probably be very soon published. In this third edition, the author, we are told, has made considerable alterations and additions.

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It is not many years since the public were
3 favoured

favoured with a valuable part of the writings of Hippocrates in an English dress ; the history, viz. of his Epidemics, translated from the original Greek by Dr Farr, a member of the Royal Society of London. We are happy in being now able to announce an English translation of another valuable part of the writings of the Father of Physic. The Prognostics and Prorretics, or the Prænotiones and Prædicta, as they have in general been styled, translated from the original Greek of Hippocrates, with large annotations critical and explanatory, by Dr John Moffat the translator of Aretæus, are now in the press, and will probably be ready for publication in the course of the ensuing winter.

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We mentioned in our last volume, that at the time of our annual publication, the first volume of the transactions of the Royal Society of Edinburgh was almost printed off:

3 And

And not long after, the whole papers intended for the volume, falling either under the physical or literary class, were completed. But to these memoirs it is intended, that, after the example of the Royal Academy of Sciences at Paris, a history shall be prefixed: and the conduct of this part was committed to the secretary of the Society. But from a long-continued illness to which that gentleman has been subjected, the execution of it has been unavoidably retarded. This preliminary part, however, is now so nearly finished, that we think we may with confidence say, the publication will appear in the course of a few weeks.

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A correspondent in London sends us the following account of an intended publication by Dr Denman, whose reputation as a practitioner and teacher of midwifery has long been established.

“ Dr Denman has issued propofals for publishing engravings of various fubjects, principally relating to his own profeflion. I have feen fome of them, and they are very elegantly executed, moft of them by Riemf-dyck.”

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To another valuable correspondent we are indebted for the following information refpecting fome foreign publications.

A publication will foon take place at Vienna under the title of *Acta Academiæ Cæfareo-Regiæ Medico-chirurgicæ Vindobonenfis*, tom. 1. It will be a quarto volume, illustrated with feveral copperplates, and will contain papers on medicine, furgery, anatomy, &c. by Mr Brambilla furgeon to the Emperor, Mr Scarpa, and feveral other of the moft eminent practitioners at Vienna.

Mr Landriani, profeflor of natural philo-
fophy

sophy at Milan, who has formerly published a treatise on inflammable air, is engaged in preparing for publication a treatise, written in the French language, on heat. In this treatise a variety of new observations and experiments are contained.

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Some months ago an essay was published at Philadelphia, on the causes of the variety of complection and figure in the human species ; with strictures on Lord Kames's discourse on the original diversity of mankind ; by the Rev. Samuel Stanhope Smith, D. D. vice-president and professor of moral philosophy in the college of New Jersey, and member of the American Philosophical Society held at Philadelphia for promoting useful knowledge. A new edition of that essay is at present in the press at Edinburgh. This edition will contain several additional observations and notes

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by a gentleman of the university of Edinburgh.

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Mr Benjamin Smith Barton, member of the Royal Medical Society of Edinburgh, whom we have already had occasion to mention in this volume as having gained the Harveian prize for 1786, intends soon to publish observations on some parts of natural history ; to which he is to prefix an account of several remarkable vestiges of an ancient date, which have been discovered in different parts of North America.

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A new edition of the *Encyclopædia Britannica*, or Dictionary of Arts, Sciences, and Miscel-

Miscellaneous Literature, which was some years ago first published at Edinburgh, will soon be put to the press. Of a work which has met with so favourable a reception from the public, it is unnecessary for us to say any thing. We may only observe, that it is now to be extended to twelve volumes in quarto, with many additional plates; and we may refer our readers who wish for a more full account of it, to the proposals, which will be published in a few days.

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Dr Robert M'Causland, an ingenious physician, by whose observations former volumes of these Commentaries have been enriched, has a work at present in the press at Edinburgh, intitled, Conjectures on some Phenomena of the Barometer; to which is added, a paper on the inversion of objects on the retina.

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Mr William Houlston of London has issued proposals for publishing by subscription, in one volume quarto, Surgical Tracts, by the late J. O. Justamond, Fellow of the Royal Society, and surgeon to the Westminster Hospital.

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The sixth and last volume of Mr Bell's System of Surgery is now in the press at Edinburgh. We may therefore congratulate our readers on the prospect there is that this valuable work will be speedily completed. In this sixth volume, as we formerly announced, the ingenious author treats of fractures, luxations, and several other important subjects which had not been considered in his former volumes.

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In the 28th volume of the *Leipfic commentaries*, an account is given of the opening of a new academy of surgery at Vienna. Some years ago the present Emperor instituted a school of surgery, under the direction of the celebrated Brambilla. In this there were at first only two professors; and to their charge the instruction of an hundred and thirty young men was committed, thirty of whom had formerly been surgeons in the army. But of late the number both of the teachers and pupils has been considerably increased. Gabrieli has been appointed to teach pathology and practice; Boecking, anatomy, physiology, and physics; Streit, medical and pharmaceutical surgery; Hunczowsky, surgical operations, midwifery, and the *chirurgia forensis*; and Plenck, chemistry and botany. To these also has been added, Beindl, as professor and extraordinary pro-

feffor of furgery and anatomy. Befides this, the Emperor, with his ufual liberality, has provided a large and fplendid edifice in Vienna, which affords habitation both for the teachers, the ftudents, pregnant women, patients for clinical lectures, and fervants. He has alfo purchafed for the ufe of this academy a medical library, which is open every day, a complete fet of chirurgical inftruments, an apparatus for experiments in natural philofophy, a collection of natural hiftory, a number of anatomical and pathological preparations, a collection of preparations in wax brought from Florence, and a variety of other ufeful articles. Adjoining to the building alfo there is a good botanical garden.

On the opening of the medico-chirurgical fchool, Brambilla delivered an oration to a very fplendid audience; and by order of the Emperor, prefented gold and filver medals to many of thofe who were prefent. This difcourfe has fince been publifhed, and is intituled, “*Oratio J. A. Eq. A. Brambilla, habita Vindobonæ cum nova Cæfareo-regia Academia medico-chirurgica, anno 1787 die nono menfis Octobris folemniter apperieretur.*” This
oration

oration is divided into two parts. In the first of these, the author treats of the antiquity of surgery; of the necessity of practising it; of its great extent; of the satisfaction attending it from its certainty; and lastly, of the nobleness of the art, and of the high rewards and honours that have been conferred on its professors. In the second part of his oration, he compares the former state of surgery in the Austrian provinces with its present condition; and from thence endeavours to infer what will be its condition hereafter. He complains of the neglect and contempt that has been shown for surgery in Germany; and states the obligations which surgery and its professors owe to Joseph II. Among other parts of this institution, three prize-medals, each of the value of forty florins, are to be annually bestowed on those students who return the best answer to questions proposed the year before. These prizes are not entirely founded by the Emperor, but are in part owing to the liberality of Brendellius the Protochirurgus at Vienna.

His

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His Serene Highness William Prince of Hesse, a great patron of learning in his dominions, has lately instituted a new professorship in the university of Marpurg, a professorship scientiæ cameralis et œconomix; and he has invited to that chair Dr Nathanael Godofredus Leske, professor of natural history and œconomy at Leipzig; by whom the publication of the *Commentarii de rebus in scientia naturali et medicina gestis* has been conducted for some years past. As Dr Leske has accepted of this appointment, he will of course soon leave Leipzig. But although he be to change the place of his habitation, yet he has engaged to labour with his usual industry in the continuation of that work. And indeed hitherto it has been conducted by learned men not merely at Leipzig, but in several different parts of Germany. From the continuance of the exertion of learned and industrious colleagues, Dr Leske, who still proposes to be the editor of the Leipzig Commentaries,

Commentaries, hopes to render them no less extensively useful than before. Communications, however, intended for the work, must now be addressed to him either at Marpurg; or, if it be more convenient to transmit them to Leipzig, they may be sent there to the care of Jo. Godf. Muller, bookseller.

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The Prince of Hesse has lately made several other alterations on the university of Marpurg, by appointing men of eminence to different professorships. Among others the celebrated Dr Baldinger, formerly archiater at Cassell, has been appointed primarius professor of medicine; Drs Stein, Michaelis, Monch, Stegmann, and Bruhl, the three last of whom were formerly professors at Cassell, have been appointed professors at Marpurg, and have gone to reside in that city; at which we are also informed that a botanical garden, a chemical laboratory, and a lying-in hospital, have lately been established.

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The Royal Society of Sciences at Copenhagen have lately elected into their number Sir Joseph Banks, president of the Royal Society of London; Peter Simon Pallas of the Petersburg academy; Andrew John Retzius, professor of botany at Lund; and Henry Nicander, secretary to the Academy of Sciences at Stockholm.

The celebrated Thunberg, successor to Linnæus as professor of botany at Upsal, has been invested by the king of Sweden with the equestrian order of Vasa.

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The celebrated Zimmerman, professor at Brunswick, was lately elected one of the ordinary members of the Imperial Academy of Petersburg; and it was imagined that he would remove to that city: But the Duke
of

of Brunfwick has, we are told, conferred upon him fuch additional honours as have induced him to decline the offer made to him from Ruffia, and to remain in Germany.

On the 31ft of March 1786, J. H. Fifcher, M. D. was appointed one of the profefors of medicine at Goettingen.

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In February laft, on the refignation of Dr Burges and Dr Muckleftone, Dr Matthew Baillie and Dr George Pearfon were elected phyficians to St George's hofpital in London. Both thefe gentlemen have engaged with great induftry in teaching different branches of medicine at London. Dr Baillie, who fucceeded to his uncle, the late celebrated Dr Hunter, is conjoined with Mr Cruickfhank as teacher of anatomy in the theatre and mufeum built by Dr Hunter in Windmill-ftreet; and Dr Pearfon, availing himfelf of the opportunity which his fituation as an hofpital-phyfician

physician affords to him, has begun clinical lectures at that charitable establishment. For this purpose he keeps an accurate register of the cases of those patients who are admitted into the hospital; and in a few days after their admission, explains, in a lecture given once or twice a-week as may be necessary, the nature of each case, and the method proposed for treating it. And after the case is brought to a conclusion, remarks are offered on its progress and termination. It is needless for us to point out the benefit which an attentive student must derive from such remarks. We may only remark, that in consequence of such a course of lectures, delivered with judgment and candour, the industrious observer must profit not only by the discernment and abilities of a teacher, but even by his omissions and errors.

Besides the clinical lectures, Dr Pearson delivers also two other courses of lectures; the one on the practice of physic, the other on chemistry. Each of these courses consists of about sixty lectures. The subscription for any one of the above courses is three guineas,

neas, for both courses five guineas, and as a perpetual pupil six guineas.

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Mr John Pearson, surgeon to the Lock Hospital and to St Clement's Dispensary, is at present engaged in delivering at London a course of physiological and chirurgical lectures. The course consists of four parts: 1. Lectures introductory to the study of physiology and pathology; 2. Physiology, or the doctrines of the animal œconomy; 3. Institutes of surgery; 4. An extensive view of the history and treatment of scrophula, syphilis, and gonorrhœa. The terms are, for one course three guineas, for two courses six guineas; after which gentlemen are considered as perpetual pupils.

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Dr Osborn of London, who has long been favourably known to the public, both as a
practi-

practitioner in midwifery, as an author, and as a lecturer, has lately taken Mr John Clarke surgeon in Chancery-lane as a partner in his lectures on the theory and practice of midwifery, and on the diseases of women and children. The students, when properly qualified, have the advantage of attending patients at the lying-in hospital in Store-street.

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We mentioned in our last volume, that a course of clinical lectures on surgery had been begun in the Royal Infirmary of Edinburgh by Mr James Russell; and we are happy to add, that his lectures last winter gave much satisfaction to his hearers. He has again resumed his labours at the commencement of the present winter-session. And there can be no doubt that the undertaking will be productive of many advantages to the industrious student.

During

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During the course of the year 1787, Dr Samuel Spalding, Dr George Bachmetieve, and Dr Thomas Cochran, have been elected Fellows of the Royal College of Physicians of Edinburgh; and Dr Thomas Spens, Dr John Drummond, and Dr Patrick Baron Seton, have been admitted Licentiates of the College.

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The Royal College of Surgeons of Edinburgh have obtained an act of Parliament for making a provision for their widows and children, from annual payments made by each member during his life. The College, on this occasion, have been so much indebted to

the exertions of one of their number, Mr Hay, that they have presented that gentleman with an elegant piece of plate, on which is engraved the following inscription :

Viro optime de Collegio Chirurgorum Edinensium merito,
 THOMÆ HAY,
 Quia Viduis quæ maritos atque Liberis qui parentes amissos deſſerunt
 Labore indefeſſus conſuluit,
 Vas hocce argenteum, grati animi monumentum,
 Publico fratrum conſenſu
 Donatum eſt.
 1787.

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About the beginning of the year 1785, died at Florence Xaverius Manetti, profeſſor of medicine and botany, and director of the botanical ſociety of that city. He is well known to the learned world as the author of ſeveral ingenious and uſeful works on botany and other branches of natural hiſtory.

On the 31ſt of July 1785, Dr Jo. Ger. König, an indefatigable botaniſt and natural hiſto-

historian, and a corresponding member of the Academy of Sciences at Copenhagen, died at Tranquebar.

On the 5th of November of the same year, Philip Gueneau de Montbeillard, justly celebrated for his continuation of Buffon's history of birds, and several other works in natural history, died in the 65th year of his age.

On the 5th of Jan. 1786, J. Steph. Guettard, member of the Faculty of Medicine in Paris, died in that city. He held the offices of censor-royal and botanist to the Duke of Orleans. He was a celebrated mineralogist.

On the 6th of January, died at Madrid the celebrated Petrus Franciscus Davila, chief director of the museum of the king of Spain, a member of several learned societies, and a physician of great eminence.

On the 5th of March, died at Berlin the celebrated Schmucher, surgeon to the king of Prussia, and director of his military hospitals.

On the 19th of April, M. J. N. Moreau of the Royal Academy of Surgery in Paris, and chief surgeon to the Hotel-Dieu, died in that city.

Dr H. Maret, physician at Dijon, one of the members of the academy there, and of several other learned societies, died on the 11th of June, in the 59th year of his age.

In the month of September, the celebrated Gleditsch, a member of the Academy of Sciences at Berlin, died in that city, in the 73d year of his age.

And in the course of the same year, the illustrious C. G. Scheele, justly celebrated over all Europe for his chemical writings, died at Stockholm.

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The following deaths of men distinguished for their abilities in medicine or philosophy have taken place during the course of the year 1787.

Feb. 13. The Abbé Boscovich, justly celebrated over all Europe by his philosophical publications. He had arrived at the 77th year of his age.

March

March 18. Dr John Rotheram, physician in Newcastle, in the 68th year of his age. He had for a long time, with great credit to himself and benefit to the public, acted as physician both to the infirmary and also to the lying-in hospital at Newcastle.

Sir William Watfon, an eminent physician in London, and vice-president of the Royal Society. In a future volume, we hope to be able to present our readers with some authentic memoirs of this learned and respectable physician.

July 4. Sir Richard Jebb, Bart. He was born at Stratford in Essex, a few miles from London, where his father practised as a physician. He had a liberal classical and philosophical education at Oxford; but being by principle a Nonjuror from his father, he could not be matriculated, nor take any degree, at that University. He afterwards studied medicine in London and in Leyden; and from the University in the latter of these cities, he obtained the degree of Doctor of Medicine. Upon settling in London, he entered as a Licentiate of the College of Physicians; and in the year 1768, he was elected a Fellow of that respectable

body. He was for some time physician both to St George's Hospital and to the Westminster-Infirmiry. As a practitioner, his eminence became so great, that when the Duke of Gloucester fell dangerously ill in Italy, he was requested to go abroad to attend to the health of that Prince. And on this occasion, his conduct gave so much satisfaction, that he was called abroad a second time to visit the same prince on a future illness in 1777. He was made physician-extraordinary to the king about the time of his second journey to the continent on account of the Duke of Gloucester; and in 1780 he was appointed physician in ordinary to the Prince of Wales. He not only held these offices about the royal family, but was for several years one of the physicians chiefly employed there, and in whose judgment great confidence was placed. Upon the death of Sir Edward Wilmot in November 1786, he was appointed one of the physicians in ordinary to his Majesty, as we had occasion to mention in our last volume. But this office he did not enjoy for many months. He died in the 58th year of his age; and the immediate cause of his last illness

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ness was supposed to be fatigue and anxiety in attendance on two of the princesses during the measles. He was suddenly attacked with a fever in their apartments at Windsor, and fell a victim to the disease after a few days illness.

July 9. Dr William Irvine, lecturer on chemistry and materia medica in the University of Glasgow.

We hope the following account of this ingenious gentleman, with which we have been favoured by a worthy correspondent, will not be disagreeable to our readers.

Dr Irvine was the son of a respectable merchant in Glasgow. Having spent the usual time at a grammar-school of that place, in the year 1756 he began to study at the University, where he learned the languages with facility, and speedily acquired a general knowledge of the sciences. His genius led him very early to mathematical researches, which he continued to prosecute with great industry and success. However, he made choice of medicine as a profession; and after taking his degree in Glasgow, he went to London and Paris, where he studied most

attentively every thing connected with his profession.

In 1766, the chemical chair becoming vacant, Dr Irvine was a candidate. Nobody doubted his abilities as a chemist; and in teaching botany for several years, he had given ample specimens of his talents as a lecturer: But another gentleman, who has since distinguished himself in various departments of science, having stronger interest, was preferred. Mortified at this disappointment, Dr Irvine at first resolved to quit his native city; but some members of the University were sorry to lose one whose bright dawn promised a splendid noon. The venerable Dr Reid, in particular, interested himself so warmly, that a new lectureship was instituted, with a salary equal to that annexed to the chemical chair. For several years Dr Irvine taught *materia medica* with great applause, though his pupils were few and his emoluments scanty. About the year 1769 or 1770, the chemical chair having again become vacant, he was appointed lecturer both in chemistry and *materia medica*.

In all his lectures, Dr Irvine displayed profound

found erudition, as might be expected from a man of genius, who had constant access to an extensive library, and who had devoted his time from his youth to literature and science. He did not content himself, however, with retailing the opinions of other men. He thought for himself; and he was eminently qualified to do so, both by a great share of natural sagacity, and by an intimate acquaintance with the mathematical manner of reasoning. He marked with precision the limits between the fictions of theory and the facts ascertained by experiment. But he was not a mere operator, the drudge of science, who continues to pile up fact upon fact, without establishing any principle, without deducing any conclusion. His experiments were simple, his inferences accurate; whence he struck out new lights, respecting not only the best mode of conducting chemical processes, but also respecting some of the sublimest doctrines of chemistry. Of his particular discoveries, however, I can give no detail. This shall be done in a future volume, if any authentic account of them can be procured.

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As far as I can learn, Dr Irvine published nothing. His lectures were written on detached papers, and he added innumerable illustrations suggested at the moment. His language was simple and correct in a high degree; and the singular precision of his terms, together with the accuracy of his arrangement, enabled him, with uncommon success, to unfold the most intricate subjects. I am informed he has left some interesting manuscripts; which, in the opinion of the best judges, fully justify the encomium now bestowed.

Dr Irvine, though profoundly skilled in every department of physic, never was engaged in extensive practice, owing partly to his early predilection for science, chiefly to his manner. Disregarding the prejudice and vanity of men, he neither soothed the one nor flattered the other. He spoke what he thought true, he did what he thought right, without troubling himself about the consequence. If any additional proof were needed to show how little the most extensive information and the most solid abilities could avail in the practice of physic, unless they are varnished
over

over with gaiety or complaisance, and aided occasionally by suppleness, artifice, and adulation, an affected dignity of reserve to some, and a sycophantic compliance with others, this gentleman's case might be quoted anew. Men always were, and always will be, niggardly to those who presume to claim their favour as a right; but they bestow it with a lavish hand on such as condescend to request it, with the cringing servility of an Asiatic.

Dr Irvine's exemption from practice, tho' adverse to his private fortune, had one good effect; it enabled him to devote much of his time to the manufactures of his native city. Since the beginning of the American war these have increased exceedingly; and the progress of many, especially of those connected with chemistry, was hastened by the judicious experiments and observations of this gentleman, who instructed the manufacturers with the utmost frankness and patience. Of late he had a direct concern with a very considerable company employed in manufacturing glass; and he spent much of his time in contriving the furnaces, and regulating the processes, so as to produce the greatest quantity

tity of work at the least expence. He was busy with this favourite scheme, which seemed to thrive under his management, when about the end of June he was seized with the fatal fever. The symptoms were from the first unpromising; and on the eleventh day of the disease, he expired, leaving a widow and one son.

His intimate friends regret his loss; because they knew and esteemed his worth. Many of his fellow-citizens also regret his loss, though from different motives. He was useful to them; he solved their doubts; he corrected their errors; he pointed out many improvements, in consequence of which they saved money. Yet it was doubtful how long they might have enjoyed the benefit of his instruction, even if his life had been prolonged. He felt his genius cramped in a sphere too narrow for its exertion; and it is believed that at times he thought of imitating his friend Mr Watt, who tried in vain to procure adequate encouragement in Glasgow.

Last season Count Luzuriaga, who was sent to Britain at the expence of the Spanish government, visited Glasgow, and saw Dr

Irvine several times. He mentioned him to the Spanish ministers ; who empowered him to make the following proposal to Dr Irvine : On condition that he would leave Glasgow, he should be fully indemnified, both for what he gave up at present, and for what he had the prospect of acquiring hereafter. For some years he must have remained in Old Spain for the purpose of being naturalized ; and during that term, some manufactures, particularly one of salt, and another of glass, were to have been conducted by him. As soon as he was naturalized, he was to go to South America, to superintend the mines, with a salary equal to his abilities, and the importance of the trust committed to him. Whether he might have found it convenient to transfer his services to the enemies of his country or not, it is needless now to inquire. The overture was verbal, and he was on his death-bed before it arrived. He died in the 44th year of his age.

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The following is the general result of observations made at the distance of about a mile from the city of Edinburgh, on the state of the thermometer and barometer, and on the quantity of rain which has fallen during the first six months of the year 1787 :

Months.	Thermometer.			Barometer.			Rain.
	High.	Low.	Med.	High.	Low.	Med.	
Jan.	48	24	30.7	30.37	29.02	29.89	0.11
Feb.	59	28	40.5	30.63	28.4	29.3	1.08
Mar.	48	30	39.3	30.62	28.65	29.40	2.19
April	56	38	46.8	30.4	28.72	29.85	1.48
May	69	43	53.9	30.75	28.92	29.79	4.73
June	72	46	58.0	30.17	29.30	29.67	3.22

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On Condensation being the only Cause of Heat in Nature.

Dr Webster of Edinburgh, in his chemical lectures, has, for several years past, delivered

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an opinion on the Cause of Heat, which we have met with nowhere else ; and as holding a number of facts together, we give the following sketch of it.

He considers heat, whose general effects are calefaction, rarefaction, and ignition, to be the most subtile fluid known ; existing in all other kinds of matter according to their peculiar capacities and states ; circulating among them according to various circumstances, as their difference in capacity, temperature, vicinity, conducting power, extent of surface, and density ; and universally showing, like the electric fluid, a tendency to an equilibrium. Though it exists in every substance, it becomes perceptible and produces its general effects only when accumulated, or when, like water in a sponge, it is squeezed out by a mechanical or chemical approximation of the particles containing or attracting it. This approximation may take place with an enlargement of bulk on the whole, owing to the particular arrangement of parcels of these approximated particles and their interstices, as in the consolidation of liquid. In showing that this condensation is the only

cause of heat, he reviews all its obvious sources ; and observes that it is produced,

1. By the condensation of vapour into liquid, or of either of these into a solid ; and that it is absorbed, and cold produced, by the rarefaction of a solid into liquid, or of either into vapour. Ice becoming water, absorbs 140 deg. ; boiling water becoming vapour, absorbs 800 deg. of heat ; which is imperceptible, till on condensation the same quantity is given out, making allowance in the former case for the increased capacity of the separated air. Such substances as wax, thickened oil, &c. even in softening, and as camphor, &c. in evaporating, likewise absorb heat.

Air, in parting with its water in form of hoar-frost, and absorbing heat, may have its capacity increased similar to what seems sometimes to happen in a liquid parting with its precipitate.

2. Heat is produced by mechanical condensation of air ; as in an air-gun ; as condensed and blown through bellows on the bulb of a thermometer ; as through a blow-pipe, which condensation may compensate the violence of the current carrying off the heat ; as condensed

fed by a ball in its motion through the air; as condensed next the earth; and it is absorbed by air rarified, as on heights, or as in an air-pump.

3. Heat is produced by collision, as by flint and steel, the force and hardness being such as to excite a heat which inflames the particle of steel struck off, or by percussion, as in hammering a piece of metal, if part of a large mass, or if it meet with resistance; by repeated strokes it hardens, breaks rather than yields, and its particles must be separated by heat before it allow of approximation again. To this heat metals seem to owe their malleability, to its extrication by sudden cooling, their brittleness, and to this seeming saturation of heat, taken with their density and small expansibility by heat, they may owe their superior conducting power of additional heat. In condensing rare solids, the air forced out may carry off the heat.

4. Heat is caused by friction. No heat is produced by the agitation of liquids, except in the instant of change in such as are disposed to consolidation; as in the churning of milk, water impregnated with a salt, or wa-

ter cooled below the freezing point: Nor by the friction of solids, if liquid be interposed, because liquids are hardly condensable by mechanical means. In the chemical condensation of heterogeneous liquids, the particles may produce heat by their collusive attraction.

5. Heat is produced by the sun's rays. They do not heat transparent bodies. Hence in the higher regions of the air, there is great cold, as experienced in balloons, hence hail-showers in hot weather, and snow on mountains under the line. They burn an opaque body by a speculum or lens, without heating either much, or the air or water in which it is placed. They give out their heat in proportion to the quantity that falls; their falling directly, as in summer, though the earth be farther from the sun; their convergence; their being often reflected, as in valleys; the roughness of the surface receiving them; the density of the air as near the earth; their being absorbed, chemically condensed, or concentrated by reflection, or refraction, and resisted; so that they seem to be a substance, which, in circumstances of condensation,

tion; have a greater tendency to give out their heat than other kinds of matter. Hence the proximate planets may not, nor even the sun itself, be the hottest parts of the system. The rays from the moon being 300,000 times less dense, give out no perceptible heat; and rays in a certain state, as reflected from the clouds and sky, seem, from some experiments, to absorb heat.

6. Chemical union, in its own nature, implies an approximation of particles; and always produces, or has a tendency to produce heat, unless counteracted by liquefaction or evaporation taking place, as diminution of bulk sometimes is by the temporary heat. The condensation and heat seem to be in proportion to the force of attraction. One part of spirit of wine unites chemically with two of water, and the mixture is diminished one-twentieth of the bulk of the spirit. Ten parts of vitriolic acid unite with forty of water, and shrink one-fifth of the bulk of the acid. In both cases the condensation and heat are greater than in any other proportion, and in the latter, from the great attraction, than in the mixture of any other liquid with water.

The heat given out by vitriolic acid, uniting and consolidating with bone-ash, is very great. The force of chemical attraction is sometimes such, that heat is produced notwithstanding the liquefaction, as in the solution of the deliquescent salts, or the evaporation, as in a multitude of cases. Where the attraction is less, as in the case of non-deliquescent salts with snow, heat is absorbed. In the case of an air, as aërial acid with water; or of two airs, as this or muriatic air, with alkaline air, uniting and consolidating, various circumstances, as the small quantity of matter in the ingredients, their little attraction, the enlarged capacity of the compound, the superior absorbency of the mercury to the glass, may vary the quantity of heat given out. In the union, however, of muriatic or alkaline air with water, of nitrous with pure air, of dephlogisticated muriatic acid with inflammable air in decomposing volatile alkali, and in other such cases, the heat is considerable.

7. Under chemical union, Dr Webster includes the heat of inflammation, electricity, fermentation, and animals. In inflammation there

there seem to be two unions, which, even separately, are, by the force of the attraction, powerful causes of heat,—the union of phlogiston with pure air, and pure air with at least the denser inflammables and metals. From vegetables owing their inflammability entirely to the sun; from animals living on vegetables, or on animals which live on vegetables; from mineral inflammables being of animal or vegetable origin; from the other kinds of matter in the bowels of the earth being in general in an uninflamable state; from the rays reviving metals, and from the electricity of the air being greater by day than by night, in warm regions and weather, than in cold—he considers the great source of phlogiston and electricity to be the sun.

8. The heat of electricity, he considers to be that of flame, as it fires spirits, and a mixture of inflamable and pure air, which flame only can do. From its producing the same explosive effects with pure air, leaving the same residuum, having a similar smell, and, like it, reviving metals, he considers it, inflamable air and phlogiston as analogous,

if not identical. And as inflammable and pure air with heat produce water, he thinks these may be the elementary substances of nature. Thus vegetables grow by water and the solar rays; animals live on them; animals and vegetables contain, and are spontaneously, or by fire, resolved into all the different kinds of matter known; so that these invisible fluids may be the chief, if not the only constituents of all the varieties of matter: and thus some idea may be formed of that decay and renovation continually going on in the œconomy of nature.

9. On the heat of fermentation, he observes, matter cannot be essentially altered but by an union or a separation of ingredients. Any heat therefore generated in fermentation, may be owing to the union of what the mass parts with to the air, or attracts from it.

10. On the heat of animals, he observes, that in digestion, a temporary cold may happen from the attenuation of the aliment and the extrication of air; but that in the formation of chyle, blood, secreted matters, and the solid parts, there is a condensation of air, vapour, and liquid going on as causes of heat; that

that in a warm temperature the animal body being spongy, admits heat with difficulty, and the more so from the perspiration, a cooling cause; whereas in cold, it parts with its heat slowly, and the cooling cause is less. As the principle of life in animals, and even in vegetables, resists the tendency to fermentation, and in the former resists the action of the gastric juice, so it does heat and cold, preserving in great extremes, nearly a medium, between 25 deg. at which the serum of the blood freezes, and 156 deg. at which it coagulates. In the more perfect animals, this seems connected with respiration; and if in cold more phlogiston is given out by the lungs, and in heat less, as appears by experiments, the necessities of the system may be thus uniformly supplied, on the principle of heat being generated by chemical union.

Dr Webster thinks the cold felt in vegetables on a hot wall, may be owing to the increased capacity of the pure air which they separate and their perspiration more than compensating the heat from their union with what they absorb from the sun's rays, and from the water which they decompose.

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A language capable of composition and decomposition, is peculiarly desirable in chemistry. Various attempts have been made in different periods of the science. A complete nomenclature, indeed, cannot be expected till the different kinds of matter be analysed, the elementary substances known, and a just theory established. The convenience of Dr Webster's method will appear from the following specimen: He denominates the compound salts, Acidated alkalies, earths, and metals, and where phlogiston enters, Phlogisto-acidated; thus denoting the ingredients of their composition. Those in which there is an excess of acid, he calls Superacidated; those in which there is a defect, Subacidated; and the precipitates from the acids, he calls Deacidated. He retains the common names of the acids, denoting

ting one source of each ; and applies this generic method to the particular compounds, and to the precipitates, thus : super, sub, devitriolated, nitrated, muriated, nitromuriated, denoting those of aqua regia ; fluorated, arsenicated, boraxated, saccharised, tartarised, oxalised, benzoised, succinated, saccharolactified, acetised, lactified, formicated, unguinified, phosphorated, cærulised, denoting those of the acid of Prussian blue ; cretised those of the cretaceous acid ; camphorised, molybdised, &c.

The preparation from acid and alcohol, called Aether, he calls *acidocol*, as *vitriocol*, *nitrocol*, &c. ; the dulcified spirits, *colised* acids or alkali ; the essences, *colised* oils ; tinctures, *colised* or *aquacolised* ; infusions, *aquated* ; resinous extracts, *decolised* ; gummy resins, *deaquacolised* ; gummy extracts, *deaquated substances* ; the compounds of sulphur, *sulphurated* ; liver of sulphur, *sulphurcali* ; its air, *sulphurcaline* air ; deliquescent, *aquefcent* ; efflorescent, *deaquefcent* ; decrepitating, *subaquated* ; deflagrating, *deaërescent* ; subject to watery fusion, *soluble by heat in its own water* ; chemical attraction or affinity, or even the science itself, *unescence*.

S E C T. IV.

List of New Books.

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A System of anatomy and physiology from Monro, Winflow, Innes, Haller, Sabbattier, and the best modern authors, arranged as nearly as the nature of the work would admit, in the order of the lectures delivered by the Professor of Anatomy in the University of Edinburgh. The second edition; to which is added, the physiology and the comparative anatomy, illustrated with sixteen copperplates. The whole corrected and

and arranged, with additions. By a Member of the University of Edinburgh, 3 vols, 8vo, Edinburgh.

A system of surgery by Benjamin Bell, Member of the Royal College of Surgeons of Ireland and of Edinburgh, one of the Surgeons of the Royal Infirmary, and Fellow of the Royal Society of Edinburgh. Illustrated with copperplates, Vol. V. 8vo, Edinburgh.

First lines of the theory and practice of the venereal disease. By William Nisbet, M. D. Fellow of the Royal College of Surgeons of Edinburgh, &c. 8vo, Edinburgh.

Observations on poisons, and on the use of mercury in the cure of obstinate dysenteries. By Thomas Houlston, M. D. late Senior Physician to the Liverpool Infirmary, and Honorary Member of the Literary and Philosophical Society of Manchester, and of the Physical Society of Edinburgh. A new edition, with additions, amendments, and an appendix, 8vo, Edinburgh.

Observations on the diseases incident to seamen. By Gilbert Blane, M. D. F. R. S. Physician Extraordinary to the Prince of Wales, Physician to St Thomas's Hospital,
and

and Physician to the Fleet in the late War, 8vo, London.

Introduction to the practice of midwifery, part the first. By Thomas Denman, M. D. Physician, Man-midwife to the Middlesex Hospital, and Teacher of Midwifery in London, 8vo, London.

An essay on preternatural labours. By Thomas Denman, M. D. 8vo, London.

A practical treatise on the prevention and cure of diseases in general. By Dr John Memis, Physician in Aberdeen, and a Manager of the Royal Infirmary in that city, 8vo, Aberdeen.

A maritime state considered as to the health of seamen; with effectual means for rendering the situation of that valuable class of people more comfortable: to which are annexed some general observations on the diseases incident to seamen; and an appendix of additional notes and remarks in the order of the work. By Charles Fletcher, M. D. late surgeon in his Majesty's navy, 8vo, Dublin.

An inquiry into the present state of medical surgery, Vol. II. By Thomas Kirkland, M. D.

M. D. Member of the Royal Medical Society of Edinburgh, 8vo, London.

A reply to Dr Berkenhout's dedication to each individual apothecary in England (prefixed to his symptomatology). By Somebody who is a lover of candour, 8vo, London.

Observations on the nature, kinds, causes, and prevention, of insanity, lunacy, or madness. By Thomas Arnold, M. D. Vol. II.; containing observations on the causes and prevention of madness, 8vo, Leicester.

Observations on the use of crude mercury or quicksilver, in obstructions of the bowels arising from inflammation or other causes; with remarks on the use of castor oil. By R. S. Nevison, surgeon, Newark, 8vo, Newark.

Dr Milman's observations on the nature and on the cure of dropsy. Translated from the Latin into English by F. Swediaur, M. D. 8vo, London.

The singular case of a lady who had the small-pox during pregnancy, and who communicated the same disease to the foetus, 8vo, London.

The anatomy of the absorbent vessels of the human

human body. By William Cruickshank, 4to, London.

Observations upon the new opinions of John Hunter in his late treatise on the venereal disease. By Jesse Foot, surgeon, part 1. and 2. 8vo, London.

Physiological conjectures concerning certain functions of the human œconomy in the fœtus and adult. By James Rymer, 8vo, London.

Memoirs of the Medical Society of London instituted in the year 1773, Vol. I. 8vo, London.

An extraordinary case of lacerated vagina at the full period of gestation; with observations tending to show, that many cases related as ruptures of the uterus have been lacerations of the vagina. By William Goldson, Member of the Corporation of Surgeons in London, 8vo, London.

An estimate of the temperature of different latitudes. By Richard Kirwan, Esq; F. R. S. Member of the Academies of Stockholm, Upsal, Dijon, Dublin, Philadelphia, &c. 8vo, London.

An essay on phlogiston, and on the constitution

tution of acids. By Richard Kirwan, Esq; F. R. S. &c. 8vo, London.

The history of remarkable cures in worm cafes, by a mild and efficacious medicine. By J. Harrison, Member of the Corporation of Surgeons, London, 8vo, London.

Observations on certain parts of the animal œconomy. By John Hunter, 4to, London.

Short directions for the management of infants. By T. Mantell, surgeon and practitioner in midwifery at Dover, 12mo, London.

An account of the effects of fwinging employed as a remedy in pulmonary consumption and hectic fever. By James Carmichael Smith, M. D. F. R. S. Physician-Extraordinary to his Majesty, 8vo, London.

An essay on difficult labours, part 1. By Thomas Denman, M. D. Licentiate in Midwifery of the College of Physicians, 8vo, London.

Practical observations on the natural history and cure of the venereal disease, in three volumes. By John Howard, surgeon, 8vo, London.

A treatise on the venom of the viper, on the cherry laurel, and some other vegetable poisons. Translated from the original French of Felix Fontana, Naturalist to his Royal Highness the Grand Duke of Tuscany, by Joseph Skinner, Navy-surgeon and Member of the Corporation of Surgeons of London, 2 vols, 8vo, London.

A lecture ; containing plain descriptions of the situation of the large blood-vessels of the extremities, the instrument called Tourniquet, and the methods of making effectual pressure on the arteries in cases of dangerous effusions of blood from wounds, &c. delivered to the scholars of the maritime-school at Chelsea ; first printed for their use, and now published for general benefit. By William Blizard, F. A. S. Surgeon to the London Hospital and to the Honourable Artillery Company, and Lecturer in Anatomy and Surgery, 8vo, London.

Experiments and observations on the danger of copper and bell-metal in pharmaceutical and chemical preparations. By William Blizard. F. A. S. 8vo, London.

A treatise on the causes and effects of scir-
rhous

rhous tumours and cancers. By Henry Saffory, Member of the Corporation of Surgeons, London, and late Surgeon of the Light Dragoons in America, 8vo, London.

A synopsis of a course of lectures on the theory and practice of medicine, part I. By B. Waterhouse, M. D. Professor of the Theory and Practice of Physic in the University of Cambridge, New England, 8vo, Boston.

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